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ANALYZING PRO-POOR GROWTH IN SOUTHERN AFRICA: LESSONS FROM MAURITIUS AND SOUTH AFRICA

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Abstract:

Based on the methodology of Ravallion and Chen (2003), Kakwani and Pernia (2000) and Kakwani, Khandker and Son (2003) and using household survey data, we analyze poverty, inequality and pro-poor changes in South Africa over the period 1995-2005 and in Mauritius over the period 2001-2006. Conditions are very different in these two countries. South Africa is one of the least equal countries in the developing world while inequality in Mauritius is relatively low in comparison to other African countries. Similarly, using a reference threshold of USD 3 a day, we find that poverty headcount was initially around 42% in South Africa and 6% in Mauritius. Moreover, in addition to these initial differences, the two countries have experienced very different pro-poor growth paths. Temporal differences reveal that inequalities have increased significantly in South Africa over the period and that the poverty headcount in 2005 would have been around 10 percentage points lower without this strong adverse redistribution effect. South African growth has been anti-poor relatively speaking. Conversely, growth was absolutely pro-poor in Mauritius over the period 2001-2006. Deeper analysis is conducted across areas of residence (urban and rural) and according to educational achievements (some schooling versus no schooling) and gender. A comparison between Mauritius and South Africa allows for a better understanding of both growth and redistribution effects on poverty and for drawing some policy recommendations towards reducing poverty in these countries.

Keywords: Pro-poor growth analysis, poverty, inequality, Mauritius, South Africa
JEL Classification: D63, I32.

1. INTRODUCTION

The recent years have witnessed an increasingly strong interest in the impact of economic growth on poverty. An important reason for this has been the establishment of the so-called Millennium Development Goals, which have set poverty reduction as a fundamental objective of development. In the literature on the linkages between growth, poverty and inequality, there is often a tension between macro and microanalysis. Although a search for general conclusions may seem natural at a macro level, it is increasingly acknowledged that careful micro work is needed to deal adequately with poverty issues (Shorrocks and van der Hoeven, 2004). The objective of this paper is thus to conduct a micro-level analysis of inequality and poverty changes in two Southern African countries.

Using two household survey data separated by 5 and 10-year intervals, we are able to conduct a pro-poor growth analysis in Mauritius over the period 2001-2006 and in South Africa over the period 1995-2005. The poverty line is set at a reference threshold of USD 3 per day (to reflect Mauritius' and South Africa's status of middle-income countries), and sensitivity tests are performed to check for the robustness of results. We use the FGT class of poverty indices (Foster, Greer and Thorbecke, 1984) to measure poverty incidence and intensity, growth incidence curves (Ravallion and Chen, 2003) to show the growth rates of income over different parts of the population, and Gini indices and Lorenz curves to assess inequality. Growth-redistribution decompositions and indices of pro-poorness also enable to evaluate the recent effects of growth and inequality on poverty in Mauritius and South Africa. The analysis further discerns the development disparities across rural and urban areas, across districts and provinces, and across schooling achievements and gender of the household head. In the case of South Africa, we are also able to monitor the evolution of racial disparities. A major finding is that Mauritius and South Africa have experienced very different effects of growth on poverty and inequality, and this is suggestive of policy recommendations towards reducing poverty and inequality.

Section 2 introduces the conceptual and analytical framework for assessing the pro-poorness of growth. Section 3 presents the results of the case studies for Mauritius and South Africa. Section 4 concludes with some policy recommendations based on the paper's findings.

2. FRAMEWORK FOR PRO-POOR GROWTH ANALYSIS

Addressing whether growth is pro-poor first requires clarifying the concept of pro-poorness, which is usually related to the idea that the poor "get more from growth than some predefined benchmark". This has generated considerable debate in the scientific and policy community. Both a relative and an absolute approach have been proposed to defined growth pro-poorness. In the absolute approach, growth is defined as pro-poor if it reduces absolute poverty. In the relative approach, growth is pro-poor if reduces inequality and relative poverty, meaning that growth must benefit the poor proportionately more than the non-poor. Although the most frequently advocated manner

to achieve absolute poverty reduction is through economic growth, whether growth can be deemed to be "pro-poor" can thus depend on the impact of growth on inequality and on how much this impact on inequality feeds into poverty – see among many others Bourguignon (2003), Bruno, Ravallion and Squire (1998), Dollar and Kraay (2002), Eastwood and Lipton (2001), Ravallion (2001), United Nations (2000), and World Bank (2002).

2.1 Overview of the debate on absolute or relative pro-poor growth

A central question in the growth pro-poorness debate is therefore whether we should be interested in the impact of growth on "absolute poverty" or on "relative poverty" and inequality. To assess whether growth has been pro-poor, it is particularly important to distinguish between growth that changes the incomes of the poor either by a positive absolute amount (for absolute poverty) and growth that changes the incomes of the poor by the same proportional amount as in the rest of the population (for relative poverty and/or relative inequality). The first type of growth is deemed pro-poor by the view that a change is good for the poor if it increases the poor's absolute living standards (see for instance Ravallion and Chen, 2003). The second type of growth is deemed pro-poor by the view that "promoting pro-poor growth requires a strategy that is deliberately biased in favor of the poor so that the poor benefit proportionately more than the rich" (Kakwani and Pernia (2000), p.3).

Assessing the pro-poorness of growth under an absolute *versus* a relative view can lead to very different descriptive and policy conclusions. The main reason is that the impact of growth on absolute poverty is often quite different from its impact on relative inequality. The two leading views of pro-poorness indeed attach completely opposite weights to whether growth should be expected to change the incomes of the poor by at least some absolute amount – for absolute pro-poor views – or by at least some proportional amount – for relative pro-poor views. The tension between advocates of the absolute and relative criteria for assessing the impact of growth has also been evident in the agenda of international organizations. Perhaps the most prominent example (Meth, 2007) of this is in the "Eradicate extreme poverty and hunger" Millennium Development Goal. This goal mixes a criterion for halving absolute poverty (defined as the proportion of the population below either USD 1 per day or an absolute national poverty line) and a criterion for reducing inequality set in terms of increasing the share of the poorest quintile in total consumption.

Given that poverty reduction has become a fundamental objective of development, it is important to ask whether growth is a necessary and/or sufficient condition to achieve that objective. The consensual answer in the scientific and policy community is "no". Growth is not enough for poverty reduction since episodes of growth are sometimes associated with increasing absolute and/or relative poverty. Even for those episodes in which growth reduces poverty, "it is found that not all growth is equally good" (Thurlow and Wobst, 2006).

The impact of growth on poverty is heterogeneous for two main reasons. First, it depends on the existing level of inequality. One way to check this in the literature has been to compute a "distribution-corrected rate of growth in average income", given by initial equality times the rate of growth. For a given rate of growth, the distribution-corrected rate of growth is then larger in more equal societies than in less equal ones (see Ravallion, 2004a). Everything else being the same, a given level of growth also achieves a higher impact on poverty the greater the distribution-corrected rate of growth. Second, the impact of growth depends on the "type" of growth that is experienced. For instance, is it industry-driven growth? Is it export-driven growth? Is average growth driven by growth in rural/agricultural areas? This matters since growth differentiation across areas and sectors is bound to affect inequality, and thus poverty, in addition to the poverty impact that is expected to be generated by average growth. And what drives the changes in inequality is also bound to affect poverty.

It is also advisable to focus on existing inequality because it can be an obstacle to growth. The link between growth, inequality and poverty is indeed particularly important from a dynamic perspective. The recent literature has indeed argued that too much poverty and/or inequality may be detrimental to the growth prospects of an economy. There might even exist poverty and inequality "traps": an economy with a high level of poverty and/or inequality may fail to grow, or may grow very slowly (see Banerjee and Duflo, 2005 and World Bank, 2005). This is indeed the main message of the 2006 *World Development Report* on "Equity and Development" (World Bank, 2005). Inequality may be self-reinforcing, hindering growth, and hampering poverty reduction in the longer term.

This suggests that it may be appropriate to look at the effect of policy on absolute poverty and inequality even if we are normatively concerned only with long-term absolute poverty alleviation. Indeed, there does not seem to be a generally acceptable solution to the pro-poor debate other than saying that both absolute and relative pro-poorness should be of concern to analysts interested in the impact of growth. Because of this, we will consider below the impact of growth both on absolute poverty and on inequality.

2.2 Methodology and data

Details of the methodology are presented in the Appendix. For both Mauritius and South Africa, two recent household surveys are used to assess the evolution of poverty and inequality and to evaluate the pro-poorness of growth (absolutely and relatively speaking).

To compare poverty across countries and across time, we need to measure consumption in units that are comparable in terms of purchasing power across individuals, space and time. To do this, we first compute daily *per capita* expenditures from the micro-data records and value them according to 2005 price levels using the consumer price indices published by the statistical office of each country[i]. These *per capita* expenditures,

[i] For some countries, rural *per capita* expenditures are transformed into urban values by multiplying them by the ratio of urban/rural poverty lines, this ratio then being used as a proxy for the price differences that

expressed in 2005 national-urban price levels, are then converted into 2005 US dollars using the 2005 purchasing power parities (PPP) that can be found in World Bank (2008). PPP are commonly used for comparisons of absolute levels of living standards, although it is well-known such comparisons can be sensitive to the choice of PPP that is made.[ii] However, this choice does not affect the distribution of income shares within a country at a given time period. A poverty line of USD 3 per day is used as a reference poverty line[iii], but sensitivity tests are systematically performed to check for the robustness of results.

Sampling weights are applied to all computations. Household sizes are also used to weight the household observations, so that all estimates are computed on the implicit (and usual) basis that individuals are the appropriate units of analysis. The computation of the standard errors is done taking into account (when available) the stratification and the clustering of the household surveys. Most of the estimation of the indices and curves is carried out using the DASP package - see Araar and Duclos (2007a). The household data on Mauritius used in this report have been collected by Mauritius' Central Statistics Office seventh and eighth *Household Budget Surveys* (2001/2002 and 2005/2006) - see http://www.gov.mu/portal/site/. The sample size is respectively of 6,710 and 6,720 households in 2001 and 2006. The household data on South Africa have been collected into the *Surveys on the income and expenditure of households* (1995/1996 and 2005/2006) by Statistics South Africa - see http://www.statssa.gov for more information. They concern 29,582 households in 1995 and 21,144 households in 2005.

3. CASE STUDIES OF MAURITIUS AND SOUTH AFRICA

Using those datasets and the standard methodology described above and in the Appendix, a pro-poor growth analysis was conducted for Mauritius over 2001-2006 and for South Africa over 1995-2005. The following describes the initial conditions of those countries, including the levels of poverty and inequality. Indices of pro-poorness are thereafter presented along with growth-redistribution decompositions. As we shall see, the results from the two countries are very different.

3.1 Initial conditions and policy environments in the two countries

Mauritius is a small country of less than 2,000 sq km with a little more than 1 million inhabitants; it is also the most densely populated country in Africa. It includes the isolated island of Rodrigues and several smaller islands. Around half the population lives in urban areas. Despite its density and relatively small size, geographical and social diversity in living standards does exist in Mauritius. Pockets of both urban and rural poverty exist, the latter notably on the Rodrigues island. Disparity in incomes in urban areas is usually considered to be greater than in semi-urban and rural ones. Although various cultures and traditions live in peace in Mauritius, Mauritian Creoles, who make

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prevail between the urban and the rural areas in those countries. This is not done for Mauritius and South Africa since no readily available information on spatial price variation could be found.

[ii] See for example Chen, Datt and Ravallion (1994) for a discussion of the use of PPP for international comparisons of poverty.

[iii] If we set a poverty line under USD 3, the number of poor in Mauritius is quasi nil.

up a third of the population, live in relatively greater poverty. There is also evidence that the prevalence of lower incomes is mostly explained by unemployment (officially modest, at less than 10%) as opposed to low wages.

Since its independence in 1968, Mauritius has developed from a low-income economy based on agriculture to a middle income economy increasingly diversified into industrial, financial and touristic sectors (services accounting for two-thirds of the economy). Mauritius' rapid economic progress over the last four decades has set it as an example of an African success story in terms of economic and social development. The institutional source of Mauritius' success has traditionally been attributed to the provision of a stable and competitive regulatory and fiscal (including relatively low income and corporate taxes) environment that favors labor-intensive activities in sectors such as sugar, textiles and tourism. Such policies have tended to reduce unemployment and increase labor force participation, in particular that of women.

Mauritius' poverty reduction strategy has been to expand employment opportunities and modernize its economy, while maintaining an elaborate social safety net. It has been hoped that what remains of extreme poverty after several decades of strong economic growth would be alleviated by skills acquisition programs for unskilled and uneducated individuals and nutritional and medical assistance for the others. Mauritius has also had a policy of allocating significant public resources to education and health. Adult literacy and life expectancy are well above the sub-Saharan African average. Health care is free and health facilities are of reasonably good quality and accessibility throughout the country. The benefits of Mauritius's educational system have also become more universally distributed in the last 15 years, with a move away from a strongly elitist system to one with greater accessibility to secondary and higher education.

Mauritius' economic success has largely been built as a sugar and clothing exporter as well an upmarket touristic destination. The government's development strategy has recently largely centered on attracting foreign investment. This has created a large number of offshore entities, many of which in direct commercial links with India and South Africa. Mauritian exports have, however, recently been hit by fierce competition from lower-cost textile producers as well as by the loss of European sugar subsidies. Recent public policy challenges have consequently dealt with decline of Mauritius' traditional textile and sugar industries, and attempts to diversify the economy towards sectors such as information technology, financial services, business outsourcing, and greater growth potential for its tourism industry. The latter is being stimulated in part by reducing duties on products such as clothing, food, jewelry and electronic equipment.

Mauritius’ government has recently set up an ambitious package of social measures to mitigate the negative impacts of the recent global financial crisis. This has included large increases in subsidies for rice, flour and cooking gas, income support for close to 100,000 beneficiaries, the restoration of a universal old-age pension and a 9 per cent increase in social assistance. Further measures have aimed at promoting inclusive growth and full employment. Some 9,300 small entrepreneurs (such as planters, breeders, fishermen, retailers and hawkers) who experienced difficulties in repaying their loans were targeted

to receive support. The Eradication of Absolute Poverty (EAP) program is set to assist 7,200 families living in extreme poverty with the payment of school fees and health spending. EAP will also provide public housing and training to the unemployed. Mauritius' program also contains provisions to address the problem of female unemployment, as women make up only 20 per cent of the paid workforce. The Empowerment Programme targets women over 45 and contributes 75 per cent of their wages as opposed to 50 per cent for men. In addition, a new credit scheme is being created to meet 100 per cent of the financing requirements of projects implemented by women.

South Africa's successful transition from apartheid to full democracy in 1994 has given the world a powerful demonstration that a peaceful shift from political conflict to cooperation was possible. Since then, South Africa has also displayed remarkable socio-political stability, which has resulted in a strong influence in Africa and internationally. South Africa also has the most advanced economy in Africa. Its geographical position grants it a privileged role as gateway to Sub-Saharan Africa, and its economy has grown rapidly since the 1994 democratic transition. South Africa's main economic sectors include mining (its largest industrial sector), manufacturing and services. Agriculture contributes around 4% to South Africa's GDP and provides mostly cattle and sheep farming. The country's financial infrastructure is also well developed. Real GDP growth, of about 4% per annum over the last 15 years, has been bolstered mostly by strong domestic demand in housing, services and manufacturing, and by strong private investment. The national government's fiscal stance has been prudent, leading to relatively low levels of total and external debt. Consumer price inflation has also been modest at about 5% since the 1994 transition.

South Africa's economy has also gone through a rapid opening to the rest of the world. Exchange controls have been relaxed and import tariffs have been reduced. This has led to a greater diversity in exports, with a decrease in the relative importance of mining. It also has stimulated a significant increase in productivity over the last 15 years. Robust economic growth in the post-apartheid period has made possible a decline in absolute income poverty. But South Africa's relatively sophisticated formal economy still coexists with a large informal economy on which a substantial part of the population depends for a living, through near-subsistence agriculture or dependence on the informal sector.

The country further suffers from the presence of large socio-economic inequalities in incomes and wealth, mostly resulting from the apartheid regime. These manifest themselves in the form of a high unemployment rate, wide areas of poverty, a significant prevalence of crime and insecurity, and a high degree of economic informality. These disparities also reflect themselves geographically. The country's climate varies significantly from region to region, with the Western Cape experiencing a Mediterranean climate and most of the interior having a semi-desert one. Most of the economic activity takes place around the province of Gauteng where Johannesburg and Pretoria are also located.

The country's official unemployment rate has remained very high at around 30% between 1995 and 2005. Given the importance of labor income in total household income, the distribution of the incidence of unemployment across regions and different socio-economic groups is strongly correlated with the geographic and socio-economic distribution of income and poverty. This is particularly important for understanding the differences in the incidence of poverty across racial groups. Unemployment has a particularly strong impact on the young, the uneducated, and those living in homelands and in remote areas. Rural unemployment rates are higher than urban ones, a feature that seems to suggest that mobility has not been as strong as in other developing countries where the incidence of unemployment is stronger in urban areas. As in many other developing countries, however, most of the unemployed are young, and this raises the challenge of coping with a labor force whose growth is fuelled by demographic pressures.

The more deprived population in terms of income and wealth also has more limited access to economic opportunities and basic services. HIV/AIDS-prevalence is high in South Africa, with an estimated 17 percent of South Africans between the ages of 15 and 49 living with HIV in 2009, one of the highest rates in the world. All of this poses important challenges for South Africa's economic and social development. Many of South Africa's challenges for economic and social development are further correlated with the legacy of South Africa's history of apartheid. The political and economic oppression of the blacks has indeed skewed the country's poverty profile along racial lines.

To accelerate growth and share more evenly its benefits, government initiatives to meet these challenges have tended to take various forms. In 1996, the government's plan to alleviate poverty relied prominently on a market-based approach to foster growth and create jobs. Trade liberalization has in particular been at the forefront of the country's post-Apartheid economic strategy, reflecting a commitment to outward-stimulated development. Government has also tried to boost productivity, long-run employment and growth through privatisation, despite short-term costs. More recent official policy has tried to reorient government spending to fight deprivation in areas such access to improved health care and quality education, provision of decent work, sustainability of livelihoods, and development of economic and social infrastructure.

Land redistribution is an ongoing issue. Most farmland is still owned by the white population. Land transfers have so far been mutually agreed by buyers and sellers, but they have been hints of possible expropriations to attain the official objective of transferring 30% of farmland to black South Africans by 2014. As of 2008, however, only between 5 and 7 per cent of land had been transferred, raising doubts on the achievability of the target.

While significant achievements have already been made in areas such as access to basic water supply, improvement in service delivery remains a priority in South Africa. The quality of health care and education is extremely heterogeneous across provinces. Primary and secondary schools too often fail to provide useful employment skills, hence prolonging the severe skill gap inherited from Apartheid and hampering economic

development and the reduction of unemployment. The gap between disadvantaged (black) and advantaged (white) schools persists, with dramatic differences in repetition and drop-out rates. In addition, important provincial disparities persist in terms of the availability of medical staff and the quality of services. A further problem is that most urban black South Africans are highly concentrated in suburban townships, far from economic opportunities; high transport costs and crime inhibit job searching in townships. Development of skills is a high priority.

3.2 Analysis of poverty incidence and intensity

3.2.1 Reduction of poverty incidence and intensity in Mauritius

Mauritius' development model seems to account to some extent for the distributive change that the country has experienced in the first half of the 2000s. Mauritius started with a relatively low level of national poverty in comparison to other African countries of similar average consumption levels. Its development process of moving from an economy based on agriculture to one increasingly oriented towards manufacturing, services and exports appears to provide part of the explanation for the fall in its national headcount rate at USD 3 from 5.8% in 2001 to 4.1% in 2006 (see Table 1). This fall is also statistically significant at a 95% level.

Mauritius' development has also had important geographical and socio-economic impacts on the distribution and the incidence of poverty. The district-level headcounts were in 2001 slightly higher (at around 10%) in urban Port Louis than in the Southern districts of Savanne and Plaines Wilhems (which were at around 3%). The isolated island of Rodrigues stood alone in exhibiting a large headcount of 30%. The estimates of the changes in poverty indicate, however, that it is in those districts where poverty was more prevalent that the poverty fall between 2001 and 2006 was also greater. The largest statistical change in poverty occurred in Port Louis, where the headcount estimate decreased from almost 10% in 2001 to less than 5% in 2006. The estimates for the island of Rodrigues also suggest an impressive fall in the poverty headcount from around 30.3% to 22.8%, an important change in only 5 years. Table 3 presents a similar decomposition to Table 1, but this time based on the average poverty gap index. In 2001, Rodrigues again exhibits a much larger degree of poverty, eight times that of the national level, and its relative contribution (24%) to total poverty is now also eight times that of its population share (3%). This suggests that the intensity of poverty in Rodrigues, relative to the national average, is even larger than its incidence. Nationally, the average poverty gap has fallen from 1.2% to 0.9%, a change that is almost statistically significant at a 5% level.

Tables 2 and 4 decompose headcount poverty (incidence) and the average poverty gap (intensity) across areas of residence (urban and rural), schooling achievements (some schooling *vs* no schooling), and gender of the household head in Mauritius. From a geographic perspective, in 2001, poverty is smallest among the 34% of households that live in urban areas, and it is largest among the 66% of households that live in rural areas. Because of this, both the absolute and the relative contributions of rural households to

total poverty are large. Around 72% of total poverty (incidence or intensity) comes from rural households. Between 2001 and 2006, for both urban (from 4.8% to 2.8%) and rural (from 6.3% to 4.9%) zones, the estimate of headcount poverty has fallen, and in both cases by a statistically significant amount. The average poverty gap has also fallen in the two areas, but more so for the urban one. A slight trend towards a greater ruralization of poverty is therefore apparent in the movement from 2001 to 2006.

Mauritius has apparently not succeeded in providing increased opportunities for employment and salaries to its uneducated population. Poverty was greatest in 2001 among individuals (about 10% of the population) living in households whose head had no schooling. The poverty headcount for such households has not changed between 2001 and 2006 and has remained at around 9%. This suggests that Mauritius' development has been most beneficial for the skilled and educated population and has not succeeded in the 2001-2006 period in lifting the living standards of the others. Table 2 shows that the poverty headcount has fallen (from 5.4% to 3.8%) statistically and numerically for those living in households whose head has some schooling.

In 2001, the incidence of poverty is also greatest among individuals who live in female-headed households (9.2% *vs.* 5.3% for male-headed households). Those households represent around 13% of the population of individuals. The average poverty gap among those living in female-headed households (2.6%) is twice as large as for those living in male-headed households (1.1%). Table 2 also shows that the poverty headcount has fallen statistically and numerically for those living in male-headed and in female-headed households in Mauritius. The fall in poverty incidence has been proportionally greater for those living in male-headed households (from 5.3% to 3.5%) than for the others (from 9.2% to 7.9%). Table 4 suggests the same results for poverty intensity.

Figure 1 show the sensitivity of the headcount to the choice of the poverty line in 2006. The incidence of poverty below USD 2 a day is negligible. The headcount rises rapidly at poverty lines higher than USD 4, which also indicates that it is at this point that Mauritius' density of consumption starts being important. 35% of the population lives on less than USD 6 a day in 2006. Figure 2 shows how the difference in headcount between 2001 and 2006 varies with the choice of poverty lines. The differences are everywhere statistically significant, except for poverty lines less than around USD 2.4. The larger the poverty line, the greater the difference between the headcounts of the two years. In other words, in 2006, for larger poverty lines up to USD 6, the number of poor was systematically lower than it was in 2001.

3.2.2 Disparities of poverty incidence and intensity in South Africa

Africa's most advanced economy has grown rapidly since its 1994 democratic transition from apartheid, with a real GDP growth of about 4% per annum over the last 15 years. It has also gone through a rapid opening to the rest of the world, with increased diversity in exports and a decrease in the relative economic importance of traditional sectors such as mining. Given South Africa's relative affluence, it may seem surprising that 42 per cent of its citizens lived between 1995 and 2005 on less than USD 3 per day (see Table 8).

This was nevertheless the case since South Africa's relatively sophisticated formal economy has coexisted and still coexists with a large informal economy and near-subsistence agricultural sector, on which a substantial part of the population depends for a living. The country also suffers from the presence of large socio-economic inequalities in incomes and wealth. These disparities also reflect themselves geographically in the data discussed above. Most of the economic activity takes place around Gauteng and Western Cape. The province-level poverty headcounts (at USD 3 a day) are also lowest in those provinces (less than 20%), and are considerably higher in all of the other (often above 50%) provinces. An example of a consequence of this is that, because of its higher poverty rate, the relative contribution of the Eastern Cape (a contribution of 24%) to total national poverty is much larger than its share (16%) in South Africa's total population.

The national poverty headcount has remained basically unchanged between 1995 and 2005 and was still in 2005 at around 41% at USD 3. The province-level headcounts have been continuously lower between 1995 and 2005 in Gauteng and in the Western Cape. In spite of this, the middle and central provinces of Eastern Cape, Free State, and North West have registered during that period important falls in poverty. In no more than ten years, the Free State province has for instance moved from the province with the second-highest poverty headcount to the province with the third-lowest poverty headcount among the nine provinces. Conversely, KwaZulu Natal has moved between 1995 and 2005 from the province with the sixth-highest poverty headcount to the province with the second-highest poverty headcount among the same nine provinces.

Poverty incidence is least among those living in urban areas, and is by far larger among those living in rural areas (see Table 10). This geographical divide is even larger for the intensity of poverty in both periods: the average poverty gap is more than three times as large in rural areas as it is in urban areas (see Table 11). The rural population share has fallen significantly from 52% to 41% in ten years, a change plausibly due essentially to migration from rural to urban areas. Rural poverty has essentially remained unchanged, but urban poverty has registered an important increase from 21% to 26%, again probably due to the urban migration of individuals that have not been able to escape poverty in the migration process. The relative contribution of the urban areas to national poverty has therefore increased importantly, from 24% to 38%. In ten years, the proportion of South Africa's poor living in urban areas has thus increased from less than a quarter to almost two-fifths. This suggests an important urbanization of South African poverty. South Africa's pattern of economic development has therefore significantly affected the urban/rural distribution of poverty.

Poverty incidence is also considerably larger among individuals living in households whose head has no schooling than among those living in households whose head has some schooling. Given the importance of labor income in the total income of South African households, this is also indicative of a strong geographical and socio-demographic divide in access to employment and production markets. In 2005, the poverty headcount is again considerably larger (70%) among individuals living in households whose head has no schooling than among those living in households whose head has some schooling (35%). Poverty by level of education (no schooling, some

schooling) has remained statistically unchanged, but the share in the population of those living in households whose head has no schooling has fallen from 23% to 19%. South African poverty has thus become increasingly associated with poverty among more educated households. Again, this supports the view that poverty alleviation policies must increasingly ponder issues of migration and rural/urban demographic pressure, as well as integration of the young and of urban migrants to labor markets.

In 1995, the incidence of poverty is also considerably greater (54% *vs* 36%) among individuals who live in female-headed households compared to male-headed households. Compared to Mauritius (13%), the share of individuals who live in female-headed households is also large, at around 33%. Because of this, almost half (42%) of the poor in South Africa are found in female-headed households. Table 10 also shows that the poverty headcount has changed numerically by little in South Africa between 1995 and 2005, for both those living in male-headed and for those living in female-headed households. The population share of those living in female-headed households has, however, increased substantially, from 33% to 43%. This now means that the majority (56%) of South Africa's poor in 2005 are now found in female-headed households. Table 11 suggests the same results for poverty intensity, except for the fact that the average poverty gap has fallen statistically for both groups.

Table 10 also decomposes South Africa's incidence of poverty across four racial groups. The largest incidence of poverty (52%) is found among the African/Black group, with the Coloured group exhibiting considerably less (almost less than half, at 27%). The Indian/Asian and White groups have a negligible incidence of poverty (always at USD 3 per day). The share of African/Black individuals in the total population is also large, at 76%. Because of this, the vast majority of South Africa's poor are found in African/Black households. In 2005, the incidence of poverty among individuals living in African/Black households has fallen statistically, with estimates down from 52% to 49%. Poverty in the other groups has remained statistically unchanged. The share of African/Black individuals in the total population has moved up from 76% to 80%. Conversely, the share of individuals living in White households has moved down from 13% to 9%. The share of South Africa's poor found in African/Black households has remained statistically unchanged at about 94%.

Figure 7 shows the sensitivity of South Africa's headcount to the choice of the poverty line in 2006. South African pockets of poverty emerge at consumption levels as low as USD 0.5 a day. The incidence of poverty rises rapidly for poverty lines between USD 1 and USD 3. Sixty percent of the population lives with less that USD 5 a day. Figure 8 shows how the difference in headcount between the two years varies with the choice of poverty lines. The differences are not statistically significant, except for poverty lines between USD 0.6 and USD 2.

3.3 Analysis of inequality

3.3.1 Slight deterioration in inequality in Mauritius

With a national Gini of around 0.34, Mauritius' level of inequality is also relatively low in comparison to other African countries of similar levels of development, especially Southern African countries. Mauritius' development experience in the early 2000s has not altered this substantially, although there is evidence that inequality has worsened slightly between 2001 and 2006. Table 5 shows the national Gini index and disaggregates it according to districts, zones of residence, and education types. The only district-level Gini index that has shown a statistically significant change between the two years is that of the Eastern district of Flacq.

Figures 3 shows the Lorenz curve for 2006 Mauritius, and Figure 4 shows the difference in the two Lorenz curves (2006 minus 2001). The evidence here is more informative than above. The Lorenz curve for Mauritius is indicative of a greater degree of equality than in many other developing countries, especially Southern African countries. The bottom half enjoys around 28% of total consumption, and the bottom 20% is responsible for around 8% of total consumption. Figure 4 shows, however, that Mauritius' Lorenz curve deteriorated slightly between 2001 and 2006. The bottom half of the population lost a bit more than 1% of total national consumption. This estimate is statistically greater than zero. In fact, the confidence intervals around the differences in consumption shares lie above zero for a wide range of middle percentiles. For a wide range of Mauritius' Lorenz curves, therefore, inequality has statistically worsened between 2001 and 2006. Although the change in the Gini coefficient is not statistically significant, there is therefore evidence that the distribution of consumption has become more unequal in the first half of the 2000s.

3.3.2 Significant increase in inequality in South Africa

South Africa's national Gini of around 0.62 positions it in 1995 among the least equal countries in the world. Within-province inequality is strong almost everywhere across the country (see Table 12). No province has seen a statistically significant fall between 1995 and 2005 in its Gini index, and four provinces have seen a significant increase in it - namely, those provinces whose Gini estimate was among the lowest in 1995. These are Western Cape (Gini estimate up from 0.55 to 0.67), KwaZulu Natal (from 0.58 to 0.66), Gauteng (0.54 to 0.64) and Mpumalanga (from 0.55 to 0.65). There has therefore been a leveling up of provincial Ginis between 1995 and 2005: those provinces that were more equal have become less so. This has led to an important and significant increase in national inequality.

The urban Gini has also considerably increased from 0.55 to 0.65, but rural inequality has fallen from 0.58 to 0.53. This is consistent with the view that migration from rural to urban areas has been associated with difficulties of the urban migrants to integrate in labor markets and to generate adequate income. South African individuals living in households with some education have also become more unequal with time, suggesting

again that labor market participation has not been made equally accessible to the increasing number of educated South Africans.

Figure 9 shows the Lorenz curves for 2005 South Africa, and Figure 10 shows the difference in the two Lorenz curves (2005 minus 1995). The evidence confirms the finding that South Africa displays a considerable degree of inequality. The bottom half enjoys little less than around 10% of total consumption; the top half enjoys around 90% of it. The bottom 10% has a negligible share of total consumption. The bottom half of the population has lost around 2% of total national consumption to the top half. The top 10% of the population has seen its share in total consumption rise by 8% in only 10 years. Inequality has statistically worsened between 1995 and 2005, consistent with the strong increase in the Gini index mentioned above.

3.4 Growth redistribution decomposition

3.4.1 Strong effect of Growth on Poverty in Mauritius

Table 6 decomposes the change in Mauritius' headcount poverty between 2001 and 2006 in terms of the effect of growth and of changes in inequality. The headcount movement can be explained in large part by a growth effect. 1.9 percentage point of the 1.7 percentage point fall from 5.8% to 4.1% can indeed be attributed to a growth effect - the *per capita* real income growth rate over the entire 2001-2006 period was about 11.2%. The bottom half of Mauritius' population lost around 1% of total national consumption to the top half. This slight worsening of inequality was not, however, substantially detrimental to the effect of growth on poverty reduction. The fall in poverty between 2001 and 2006 would have been from 5.8% to 3.9% if inequality had remained unchanged, instead of the observed fall from 5.8% to 4.1%. Hence, Mauritius's development in the early 2000s did roughly succeed in reducing poverty through growth and at a relatively modest poverty cost through an increase in inequality. For each of the urban and the rural zones, it is growth that explains numerically and statistically almost all of the fall in the incidence of poverty. Redistribution has contributed very little to the poverty change.

3.4.2 Cancellation of both effects on poverty in South Africa

The total change in poverty between 1995 and 2005 is neither numerically nor statistically significant. The effects of growth and redistribution on poverty have, however, been important (see Table 13). Growth reduced poverty by around nine percentage points. The increase in inequality increased poverty by roughly the same numerical value. Hence, both the growth and the redistribution effects have been important, but they have almost exactly cancelled each other. The headcount in 2005 would have been roughly 10 percentage points lower (from 42% to 33%) had it not been of the increase in inequality between 1995 and 2005. Hence, poverty has changed little in South Africa between 1995 and 2005, but it is not to say that little else has changed: average consumption has increased substantially, but inequality has also risen importantly, and this has cancelled all of the positive poverty effects of growth. Urban

poverty has increased significantly between the two years, due to a strong adverse redistribution effect. The effect is due to a substantial increase in inequality. The picture is reversed for rural poverty, which has not changed statistically between the two time periods. Rural growth in average consumption has been negative, and this has increased rural poverty by about 7 percentage points. The fall in rural inequality has fortunately brought down the incidence of poverty by an estimated level of five percentage points. The incidence of rural poverty has tended to remain roughly unchanged between 1995 and 2005.

3.5 Indices of pro-poorness

3.5.1 Absolute Pro-poorness in Mauritius

Table 7 provides estimates and confidence intervals for Mauritius' 2001-2006 growth rate (denoted by the variable g) and for five different pro-poor indices. The Ravallion and Chen (2003) index, the Kakwani, Khandker and Son (2003) (or $PEGR$, or "poverty-equivalent growth rate") index, and the Kakwani and Pernia (2000) index can be used as indices of absolute pro-poorness. They indicate whether the incomes of the poor have grown sufficiently in that period for absolute poverty indices to have fallen. Three of the indices can also be used as indices of relative pro-poorness. They help assess whether the incomes of the poor have grown sufficiently during a time period to follow the overall increase (g) in incomes. The first two indices are conveniently given by the Ravallion and Chen (2003) index minus g and by the Kakwani, Khandker and Son (2003) index minus g. The last index of relative pro-poorness is given by the difference between Kakwani and Pernia (2000)'s index and 1.

All of the three indices of absolute pro-poorness are statistically greater than zero; this means that the change from 2001 to 2006 has decreased absolute poverty. Conversely, the estimates of Ravallion and Chen (2003) index minus g and of Kakwani, Khandker and Son (2003) index minus g are all negative but not statistically different from zero. The same is true of the difference between Kakwani and Pernia (2000)'s index and 1. From a relative perspective, therefore, the significant growth in Mauritius' living standards between 2001 and 2006 has not been sufficiently pro-poor for that to be empirically validated.

It is important to assess whether and how the pro-poor evidence provided by the indices discussed above is supported by a closer look at the distributive impact of growth between 2001 and 2006. This can be done by looking at the absolute and the relative impact of growth across the entire distribution (Figures 5 and 6). Figure 5 shows the absolute change in consumption is everywhere statistically positive, indicating that growth has been absolutely pro-poor regardless of where we look in the distribution. However, the proportional changes relative to the growth rate in mean consumption do not vary much across percentiles. The growth rates being roughly proportional across percentiles is also consistent with the evidence discussed above that inequality in Mauritius has not changed radically between 2001 and 2006.

3.5.2 Relative Anti-Poorness in South Africa

For South Africa, only one of the three indices of absolute pro-poorness is statistically greater than zero (see Table 14). Thus, there is little evidence that growth has been absolutely pro-poor in South Africa between 1995 and 2005. It implies that the growth rates of the poor's incomes have not been high enough to follow the growth rate in average income. From a relative perspective, therefore, the significant growth in South Africa's average living standards between 1995 and 2005 has been relatively anti-poor, since it has decreased significantly the poor's relative shares in total consumption. Figure 11 shows the absolute change in consumption is mostly flat and visually rarely statistically different from zero, except for the very top percentiles, where it has been significant both numerically and statistically. Consumption at the 90th percentile has, for instance, increased by about USD6 a day between 1995 and 2005. Consumption of individuals between the bottom and the 80th percentiles has basically remained unchanged during the same period. Whether growth has been absolutely pro-poor therefore depends on where in the distribution we look at. If we use the poverty headcount as a measure of absolute poverty, then the evidence of Figure 12 suggests that the answer is statistically inconclusive. If, however, we focus more on the growth experience of the poorest - as the Ravallion and Chen (2003) index does - then, we can conclude that growth has been (marginally) absolutely pro-poor. As reported in Table 14, the growth rate in average consumption is around 25%. That is clearly above the growth rates experienced by most South Africans in Figure 12.

South Africa's promotion of market-based growth and job creation and its emphasis on privatization and trade liberalization has therefore had mixed results. Growth has not been absolutely pro-poor between 1995 and 2005, and it has been anti-poor relatively speaking, essentially increasing consumption levels and consumption shares only among the top 10% to 30% of the population. Strong domestic demand in housing, services and manufacturing and strong private investments have apparently not managed to integrate sufficiently the poorer South Africans, and the urban migrants in particular, into productive markets capable of raising their living standards above poverty, and capable also of fostering a more inclusive society.

4. POLICY CONCLUSIONS

Our results are suggestive of several ways through which growth can lead to poverty alleviation and greater inclusiveness. They also provide some guidance as to the type of policies that can increase the pro-poorness of growth.

The two countries have moved progressively over the last decades – through policies and structural change – from economies based largely on agriculture and primary sectors of activity to economies increasingly based on manufacturing, services, exports and tourism. As described in paragraph 3.1, in both Mauritius and South Africa, privatization and trade liberalization were promoted as policies to spur growth. However, policy choices in the

two countries have been different in terms of employment opportunities and human capital development.

While Mauritius has focused its poverty reduction strategy on education and health services and has targeted the most vulnerable segment of the population through improved social safety nets, South Africa's policy focus has shifted to fighting deprivation more recently. It has not succeeded yet in developing skills and providing quality health care and education services across the entire country.

The results in terms of growth pro-poorness have been quite different. South Africa's promotion of market-based growth and job creation has had mixed results: it has not been absolutely pro-poor between 1995 and 2005, and it has been anti-poor relatively speaking, improving living standards only among the top third of the population. The increase in domestic demand for housing and services and the rise in manufacturing and private investments have not integrated sufficiently the poorer South Africans (and the urban migrants in particular) into productive labor markets. Because of this, South Africa's pattern of economic development between 1995 and 2005 appears to have failed to generate a pattern of inclusive development. South Africa's growth benefitted almost exclusively the higher earners in urban areas. Rural workers gained very little from it, and the unskilled and lower urban earners often lost from it.

In the two countries, there are important development disparities across rural and urban areas. Poverty is initially larger in rural than in urban areas; it is substantially more so in South Africa. South Africa's recent pattern of economic development has also affected the urban/rural balance. The rural population share has fallen significantly from 52% to 41% in ten years, a change that can be attributed essentially to migration from rural to urban areas. Though rural poverty has remained unchanged, the incidence of urban poverty has registered an important increase from 21% to 26%. The proportion of South Africa's poor living in urban areas has risen from less than a quarter to almost two-fifths. Again, this is indicative of an important trend towards an urbanization of poverty in South Africa. South Africa's urban Gini has also increased importantly from 0.55 to 0.65, although rural inequality has fallen from 0.58 to 0.53. This supports the view that migration from rural to urban areas has been associated with difficulties of the urban migrants to take full part in urban labor markets and benefit from the urban growth that is evident in the data.

Hence, although poverty is still by and large more rural than urban, the evidence found in the report suggests that policy should increasingly be tilted by the fact that poverty is becoming more urban. That will mean inter alia that policy will want to alleviate the effect of migration and rural/urban demographic pressure on urban poverty. There are several ways in which this can be done. One of them is through better social integration of rural migrants into their new urban setting. Another one is through better-functioning and more open labor markets. Another one is through the provision of training and educational services that would enable rural migrants to participate better in labor markets and partake in the fruits of urban growth, as opposed to being left out and increasing urban inequality.

A critical insight that emerges is the role of labor markets in transforming growth into poverty alleviation and in spreading its impact in an inclusive manner. Mauritius' development in the early 2000's has led to improved employment opportunities and labor market conditions for its relatively large skilled and educated population work force; it has apparently not, however, succeeded in providing such increased opportunities to its unskilled population. Poverty was greater in 2001 among uneducated households; despite absolute growth pro-poorness at the national level, poverty had remained unchanged between 2001 and 2006 among uneducated households.

Mauritius' pattern of export-based development oriented towards manufacturing, services and exports may not therefore have benefitted much the lower-skilled individuals. For development to benefit also the educated poor, pursuing a policy that addresses the issue of social and economic exclusion of urban and skilled unemployed – especially among the young – is of great importance. Barriers to labor mobility as well as barriers that prevent individuals to take advantage of economic opportunities must be removed. This would make it easier for the young and the newly educated to acquire experience and find employment. It would also make growth more inclusive. In short, removing labor market imperfections and barriers to employment would enhance equality of labor market opportunities and access to good wages.

In South Africa, informal employment mainly entails subsistence-level activities accomplished by rural-to-urban migrants who have been unable to enter into the modern urban labor markets. This phenomenon provides short-term support to poor households. However, in the longer term, such segmentation of the labor market can seriously challenge South Africa's economic development and poverty reduction strategy. Policies to better integrate and link informal with formal labor by encouraging informal firms to register and formalize their activities would not only reduce informal employment, but they could also boost long-term economic development.

The poverty headcount is almost always considerably larger among the uneducated than among the educated population. In Mauritius and South Africa, the educated population has also been able to benefit relatively more from growth. It thus strikes as immediately obvious that the design of growth strategies should incorporate policies to foster education and training. That will not only help achieve growth, but also make that growth more absolutely pro-poor as well as more inclusive.

With regards to women, incidence of poverty is greatest among individuals who live in female-headed households in Mauritius and in South Africa. In these countries, policies to foster the participation of women in education and in the labor force can make a significant difference in the distribution of family income and welfare. Empowering women can be one of the most effective drivers of development.

Mauritius's development in the early 2000s succeeded in reducing poverty through growth, and at roughly no cost in terms of inequality. The growth experience of Mauritius thus suggests that growth can be absolutely pro-poor without being relatively anti-poor.

One of most striking results is the fact that the country with the strongest experience of positive growth has achieved the least fall in poverty. South Africa's inequality, already in 1995 one of the highest in the world, was increased considerably by growth. The bottom half of the population, who enjoyed in 1995 around 10% of total consumption, lost 2% of it to the top half. Inequality-neutral growth would have reduced poverty by 9%; instead, growth was accompanied by an increase in inequality that increased poverty by roughly 9%. The pro-poorness of growth can therefore be quite heterogeneous across countries. If poverty reduction is the overriding objective, then policies designed to spur growth must take into account the possible impact of growth on inequality.

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Annexes

Methodology

1. Poverty indices

Let a distribution of n incomes be given by $(y_1, y_2, ..., y_n)$, where y_i is the income of individual i. Average income for that distribution is denoted by μ_i and the poverty line be given by z. The most popular index of poverty is called the poverty headcount ratio. It gives the proportion of the population that is below z. The next most popular poverty index is the average poverty gap. To understand this, it is useful to consider a measure of the extent to which the incomes of the poor fall below the poverty line. Denote this by $g_i(z) = (z - y_i)/z$ for those whose income y_i is below z, and by $g_i(z) = 0$ for those whose income y_i is equal to or greater than z. Thus, $g_i(z)$ indicates by which amount (as a proportion of the poverty line) the income i of individual would need to be raised to reach the poverty line. The average poverty gap is then the average gap in the population. It can be expressed as:

$$\mu^g = \frac{1}{n}\sum_{i=1}^{n} g_i(z). \qquad (1)$$

These two indices of poverty are members of a well-known class of measures called the FGT class of poverty indices (Foster, Greer and Thorbecke, 1984). The FGT indices are also averages of poverty indicators across individuals. The indicators are the same individual poverty gaps as before, but they are transformed by putting them to a power α. Denote the FGT indices by $P(\alpha; z)$, where the α and the z are two parameters that must be specified for the index to be calculated. These indices can then be computed as:

$$P(\alpha; z) = \frac{1}{n}\sum_{i=1}^{n} g_i(z)^{\alpha}. \qquad (2)$$

When $\alpha = 0$, $g_i(z)^{\alpha}$ equals 0 for all those not in poverty, and 1 for all those with a positive poverty gap. Hence, $P(\alpha = 0; z)$ gives the poverty headcount. For $\alpha = 1$, $g_i(z)^{\alpha}$ equals the usual poverty gap, and $P(\alpha = 0; z)$ is therefore the average poverty gap (normalized by the poverty line). The interpretation of $P(\alpha; z)$ becomes slightly more difficult for other values of α (see Foster, Greer and Thorbecke, 1984). The FGT indices are sums of individual measures of poverty. This makes them "additive" across individuals and across groups of individuals. Additive poverty indices have the facilitating property that they can be readily decomposable into sums of subgroup contributions to total poverty.

2. Growth curves and Cumulative income curves

To define Ravallion and Chen (2003)'s "growth incidence curves", it is first useful to define what a "quantile" is. Assume for simplicity that we have arranged the n incomes

of our population from the lowest to the highest. A quantile of a distribution is given by the income that is found at a particular rank in that distribution. The rank of an income y_i is given by i/n. We can then compare quantile curves before and after a change in a distribution has taken place. This can therefore allow us to understand the "incidence" of growth in our population. Let the pre-change distribution be given by y^A and the post-change distribution be given by y^B, each of equal size n (for simplicity). We can build quantile curves for each of these distributions; these are given by the incomes y_i^A and y_i^B found at different ranks i/n. We can then assess the incidence of growth at any particular rank i/n by comparing the quantile curves at the point i/n. The dollar-value change is given by $y_i^B - y_i^A$. The proportional change is given by $\frac{y_i^B - y_i^A}{y_i^A}$. Ravallion and Chen (2003)'s growth incidence curve is obtained by plotting this proportional change against all possible values of ranks i/n. This curve thus shows the growth rates of income at different points (or ranks) in the population.
Absolute pro-poorness of growth is obtained when the dollar-value change is everywhere positive over the range of ranks over which the initially poor individuals are located. Relative pro-poorness of growth is obtained when the growth incidence curve is everywhere above the proportional change in mean income.

One can also wish to aggregate the incomes of those in the lowest ranks of the population. This gives rise to two well-known curves, the Lorenz and the Generalized Lorenz curves. The Generalized Lorenz curve, denoted by $GL(j/n)$ gives the cumulative incomes of those with rank j/n or lower, divided by total population size. It can therefore be expressed as:

$$GL(j/n) = \frac{1}{n}\sum_{i=1}^{j} y_i. \tag{3}$$

Said differently, it gives the average income of an economy in which only the incomes of the poorest proportion j/n are counted. The Lorenz curve $L(j/n)$ is obtained by normalizing the Generalized Lorenz curve by mean income:

$$L(j/n) = \frac{L(j/n)}{\mu}. \tag{4}$$

It gives the share in total income of the poorest proportion j/n of the population. A shift upward of the Lorenz curve leads to an unambiguous fall in inequality.

3. Indices of pro-poorness

Drawing growth incidence curves provides a picture of the distributional change across the entire range of percentiles in a population. However, it is also useful to "quantify" into a single measure the degree of pro-poorness of a distributive change. One such measure suggested by the growth incidence curves would be some sort of average income growth rate among the lower percentiles. This averaging can be done in several manners but Ravallion and Chen (2003) advocates that it should done by computing the average

growth rates of the incomes of the poor. Hence, we can use the average height of the growth incidence curve to obtain the average growth rate of the incomes of the poor. If the index is positive, the change is deemed to be absolutely pro-poor. Taking the difference between this measure and the growth in the population's average income provides a relative index of pro-poorness; if that relative index is positive, the distributive change is considered to be relatively pro-poor.

We can build indices of pro-poorness by comparing differences in poverty indices before and after a distributive change has taken place. This can be done with any poverty index, including the popular headcount and average poverty gap indices. To test for the robustness of these changes to the selection of a poverty line z, we can graph these differences across different possible values of z. This can also help assess at which positions in the income distribution growth has had the greatest impact on the incidence and on the intensity of poverty. An alternative procedure is to compare the actual poverty outcome of a distributive change to the outcome that would have been observed if the change had been distribution-neutral (see Kakwani and Pernia, 2000). There are two main distribution-neutrality criteria in that regard. They respectively say that a change has been distributionally neutral if everyone's income has changed by the same absolute amount or by the same proportional amount. There exist several views on what that proportion should be, but the most common one is the proportional change in average income.

Let P^A and P^B be the actual pre- and post-change poverty levels, and let $P^{\tilde{B}}$ be post-change poverty under distribution neutrality. Then,

$$\frac{P^A - P^B}{P^A - P^{\tilde{B}}} \tag{5}$$

is the ratio of the actual change in poverty to the change that would have been observed under distribution neutrality. Several poverty indices can be chosen for P. In the main text, P is specified as the headcount ratio. Several scenarios of distribution neutrality can also serve to specify $\tilde{B}$. Let for instance $A = (y_1^A, y_2^A, ..., y_n^A)$ and $B = (y_1^B, y_2^B, ..., y_n^B)$. Kakwani and Pernia (2000)'s index uses the following definition for $\tilde{B}$:

$$\tilde{B} = (\frac{\mu_B}{\mu_A} y_1^A, \frac{\mu_B}{\mu_A} y_2^A, ..., \frac{\mu_B}{\mu_A} y_n^A). \tag{6}$$

It says that a change is distribution neutral if incomes change in proportion to the proportional change in average income. This index thus gives the ratio of the observed change in poverty to the change that would have been observed under constant inequality. If the growth rate in average income g is positive and the Kakwani and Pernia (2000) index exceeds 0, then the distributional movement has decreased absolute poverty. If g is negative and the Kakwani and Pernia (2000) index is also negative, then the distributive movement has again decreased absolute poverty. In these two cases, the change can therefore be interpreted as being absolutely pro-poor. When g is positive and the Kakwani and Pernia (2000) is negative, or when g is negative and the Kakwani and

Pernia (2000) index is positive, then the distributive change has *increased* absolute poverty, and it has therefore been absolutely *anti*-poor. Kakwani and Pernia (2000)'s index can also be used as an index of relative pro-poorness. If the growth g in average income has been positive, then the change in poverty $P^A - P^B$ has been relatively pro-poor if it has led to a fall in absolute poverty that is at least as large as the change that would have occurred if income shares had not changed. This is the case if Kakwani and Pernia (2000)'s index is larger than 1:

$$P^A - P^B > P^A - P^{\tilde{B}}. \tag{7}$$

Conversely, if the growth in average income has been negative, then $P^A - P^{\tilde{B}} < 0$. In such a case, we can say that the movement from A to B has been relatively pro-poor if it has led to an increase in absolute poverty ($P^B - P^A$) that is lower than the change ($P^{\tilde{B}} - P^A$) that would have occurred with no change in income shares.

Kakwani, Khandker and Son (2003) propose to assess the pro-poorness of growth by computing "poverty equivalent growth rates" instead of relying only on the usual rates of growth in average income. A poverty equivalent growth rate ($PEGR$) is the growth rate that would have resulted in the same observed level of poverty change if the distribution of income shares had not changed. One way to think of a $PEGR$ is to think of the counterfactual distribution of income $\tilde{B} = ((1+PEGR)y_1^A, (1+PEGR)y_2^A, ..., (1+PEGR)y_n^A)$ as giving the same final level of poverty as the one that is actually observed. When the growth rate $PEGR$ is applied to all of initial income y^A, poverty thus equals poverty with the distribution of y^B. We therefore have

$$P_B = P_{\tilde{B}}. \tag{8}$$

and thus that

$$P_A - P_B = P_A - P_{\tilde{B}}. \tag{9}$$

If $PEGR$ is greater than 0, the distributive change is judged to be absolutely pro-poor by this approach. This is the case if and only if $P_A - P_B > 0$.

Let $g = \frac{\mu_B - \mu_A}{\mu_A}$. g is thus the actual rate of growth in average income. If income shares remain constant in the movement from A to B, then we must have that $y_i^B = (1+g)y_i^A$ for all i. Since $P_B = P_{\tilde{B}}$, with constant income shares, it must be that $PEGR = g$. The poverty equivalent growth rate is therefore just the usual growth rate if inequality has remained unchanged. Movements in inequality will, however, create a divergence between the poverty equivalent growth rate and the usual growth rate. The greater the adverse effects of inequality on the poor, the greater the value of P_B, and therefore the lower the value of $PEGR$. Using the difference $PEGR - g$ can therefore help assess whether the distributive change has affected the income shares of the poor. If $PEGR - g$ is negative, poverty equivalent growth is lower than growth in average income, growth

among the poor is lower than average growth, and the income shares of the poor have therefore been adversely affected by the change. The converse is true when $PEGR - g$ is positive.

4. Growth-redistribution decompositions

Counterfactual inequality-neutral scenarios can also be used to decompose the change in poverty into "growth" and "redistribution" components. Consider an hypothetical scenario $\tilde{B} = (\frac{\mu_B}{\mu_A} y_1^A, \frac{\mu_B}{\mu_A} y_2^A, ..., \frac{\mu_B}{\mu_A} y_n^A)$ in which all final incomes have grown from initial incomes by the same proportion, $1+g = \mu_B/\mu_A$. Income shares and inequality in A and $\tilde{B}$ are thus the same, but average income in $\tilde{B}$ is set to average income in B. Consider also another counterfactual scenario $\tilde{A} = (\frac{\mu_A}{\mu_B} y_1^B, \frac{\mu_A}{\mu_B} y_2^B, ..., \frac{\mu_A}{\mu_B} y_n^B)$ in which counterfactual initial incomes $\tilde{A}$ are obtained from final incomes B through an inequality-neutral movement from B and average income in $\tilde{A}$ equals average income in A.

Let us first think of moving from A to B through a decomposition path that takes us from A to $\tilde{B}$, and from $\tilde{B}$ to B. The change in poverty is then decomposed as

$$P_A - P_B = \underbrace{P_A - P_{\tilde{B}}}_{\text{growth effect}} + \underbrace{P_{\tilde{B}} - P_B}_{\text{redistribution effect}} . \quad (10)$$

An alternative decomposition path is also possible; we can indeed think of a movement first from A to $\tilde{A}$, and then from $\tilde{A}$ to B. The decomposition of the poverty change is then

$$P_A - P_B = \underbrace{P_A - P_{\tilde{A}}}_{\text{redistribution effect}} + \underbrace{P_{\tilde{A}} - P_B}_{\text{growth effect}} . \quad (11)$$

The choice of decomposition path to follow is essentially arbitrary, and we may therefore just as well take the average of the two decompositions:

$$P_A - P_B = \underbrace{0.5(P_A - P_{\tilde{B}} + P_{\tilde{A}} - P_B)}_{\text{average growth effect}} + \underbrace{0.5(P_{\tilde{B}} - P_B + P_A - P_{\tilde{A}})}_{\text{average redistribution effect}}. \quad (12)$$

Results for Mauritius

Figure 1

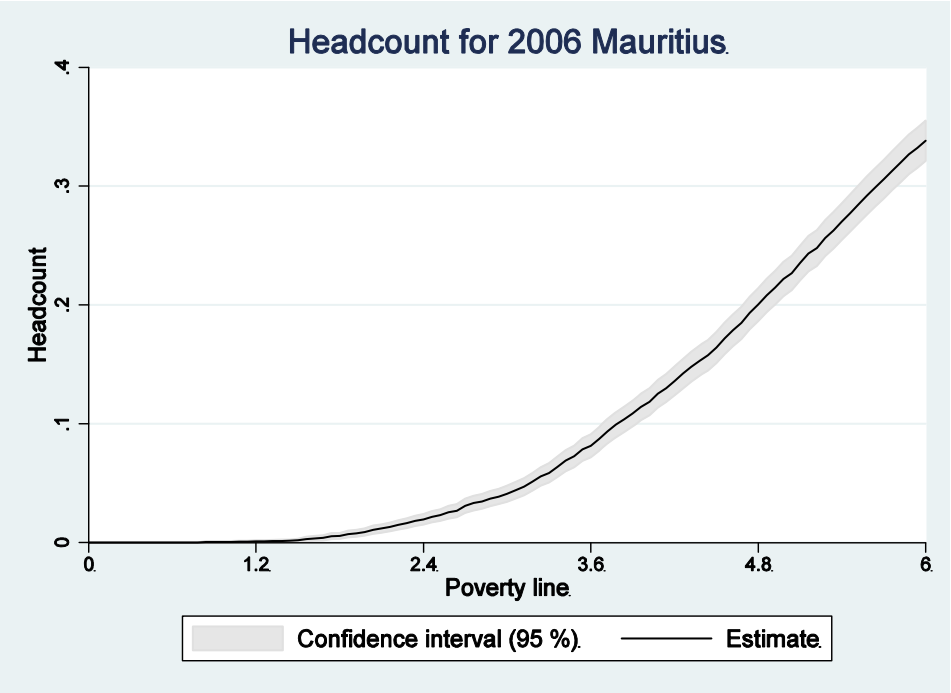

Figure 2

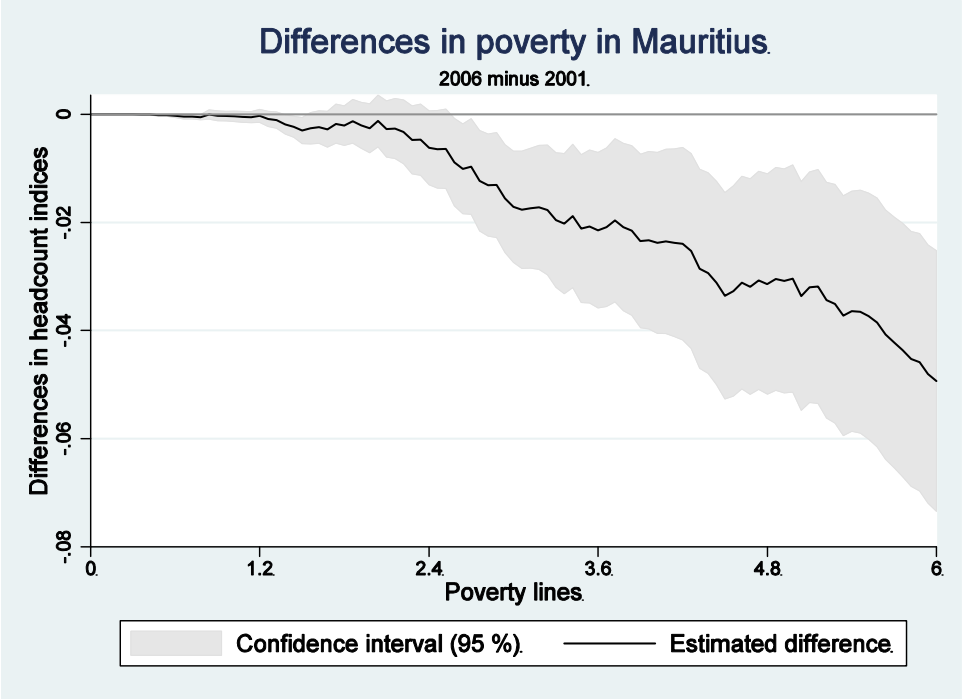

Figure 3

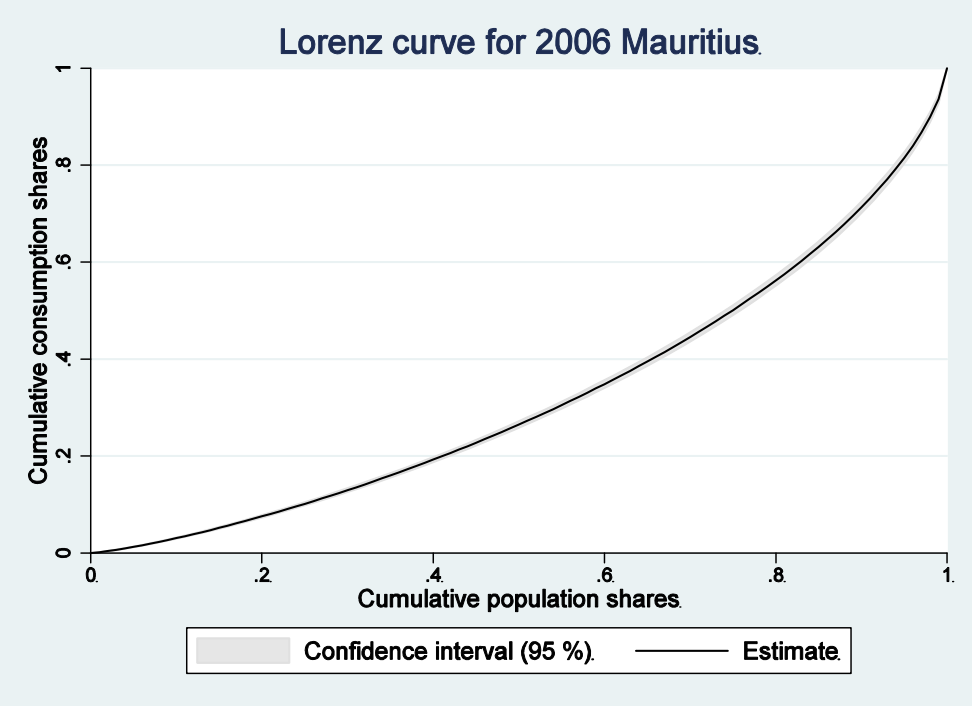

Figure 4

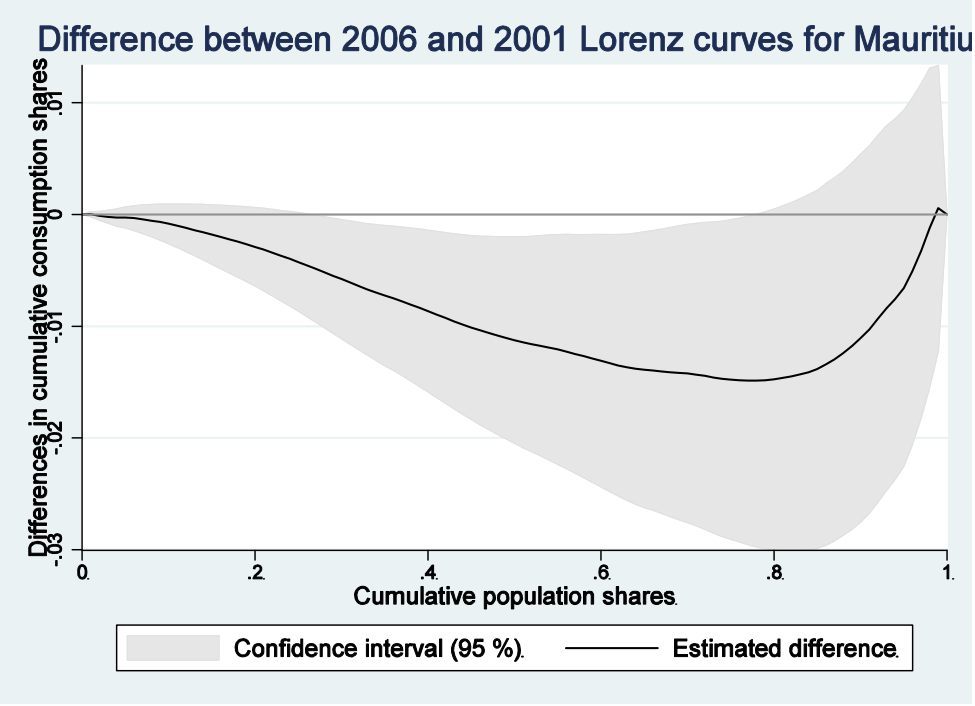

Figure 5

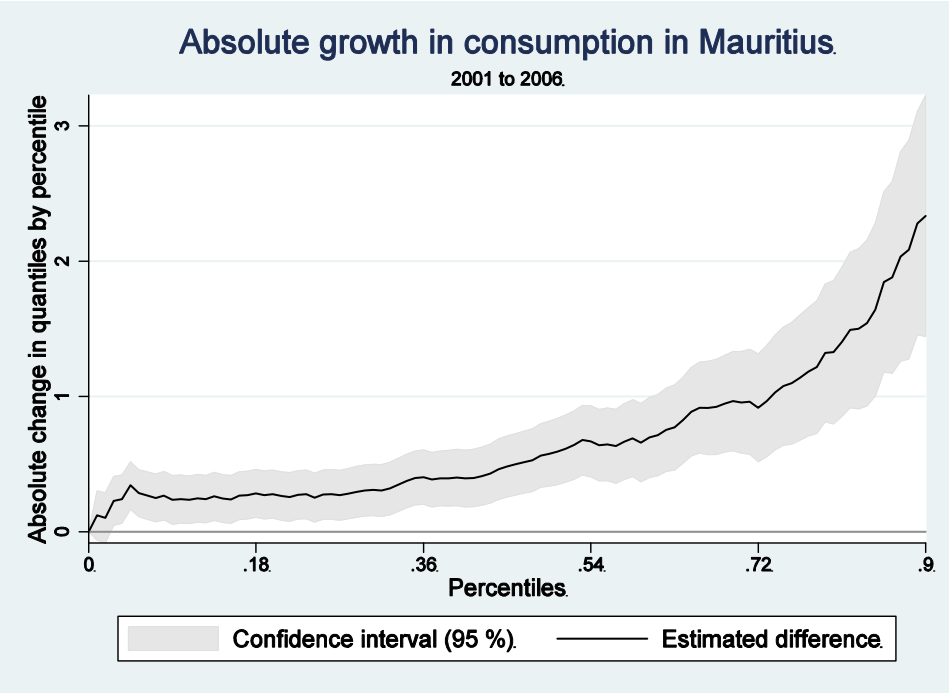

Figure 6

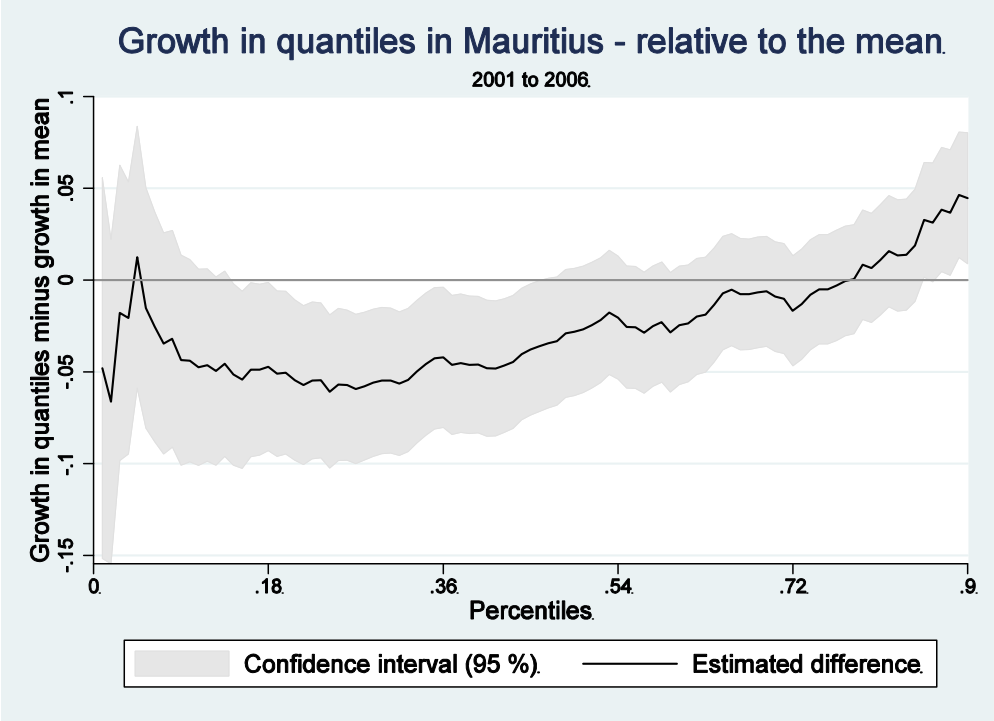

Table 1: Decomposition of total poverty (headcount) in Mauritius, with a poverty line of USD 3

	2001				2006			
	Headcount	Population share	Absolute contribution	Relative contribution	Headcount	Population share	Absolute contribution	Relative contribution
Port Louis	0.0976	0.1088	0.0106	0.1827	0.0477	0.1069	0.0051	0.1242
	0.0135	*0.0111*	*0.0018*	*0.0289*	*0.0120*	*0.0110*	*0.0014*	*0.0318*
Pamplemousses	0.0457	0.1087	0.0050	0.0855	0.0395	0.1085	0.0043	0.1045
	0.0095	*0.0112*	*0.0012*	*0.0195*	*0.0110*	*0.0112*	*0.0013*	*0.0295*
Riv du Rempart	0.0515	0.0856	0.0044	0.0758	0.0217	0.0859	0.0019	0.0455
	0.0137	*0.0100*	*0.0013*	*0.0214*	*0.0074*	*0.0101*	*0.0007*	*0.0163*
Flacq	0.0651	0.1065	0.0069	0.1193	0.0507	0.1072	0.0054	0.1325
	0.0134	*0.0111*	*0.0016*	*0.0261*	*0.0103*	*0.0110*	*0.0012*	*0.0288*
Grand Port	0.0557	0.0913	0.0051	0.0876	0.0440	0.0887	0.0039	0.0952
	0.0140	*0.0102*	*0.0014*	*0.0233*	*0.0126*	*0.0101*	*0.0012*	*0.0281*
Savanne	0.0228	0.0581	0.0013	0.0228	0.0462	0.0542	0.0025	0.0611
	0.0097	*0.0082*	*0.0006*	*0.0103*	*0.0134*	*0.0080*	*0.0008*	*0.0197*
Plaines Wilhems	0.0286	0.2845	0.0081	0.1399	0.0184	0.2982	0.0055	0.1335
	0.0057	*0.0158*	*0.0017*	*0.0270*	*0.0047*	*0.0160*	*0.0014*	*0.0327*
Moka	0.0533	0.0662	0.0035	0.0607	0.0488	0.0643	0.0031	0.0766
	0.0127	*0.0088*	*0.0010*	*0.0165*	*0.0184*	*0.0088*	*0.0013*	*0.0295*
Black River	0.0617	0.0591	0.0036	0.0627	0.0384	0.0542	0.0021	0.0507
	0.0194	*0.0083*	*0.0013*	*0.0209*	*0.0137*	*0.0080*	*0.0008*	*0.0194*
Rodrigues	0.3034	0.0312	0.0095	0.1631	0.2278	0.0317	0.0072	0.1762
	0.0283	*0.0043*	*0.0016*	*0.0260*	*0.0220*	*0.0041*	*0.0012*	*0.0281*
Population	**0.0581**	**1.0000**	**0.0581**	**1.0000**	**0.0410**	**1.0000**	**0.0410**	**1.0000**
	0.0040	*0.0000*	*0.0040*	*0.0000*	*0.0034*	*0.0000*	*0.0034*	*0.0000*

Table 2: Decomposition of total poverty (headcount) in Mauritius, with a poverty line of USD 3

	2001				2006			
	Headcount	Population share	Absolute contribution	Relative contribution	Headcount	Population share	Absolute contribution	Relative contribution
Some schooling	0.0543	0.9140	0.0496	0.8536	0.0383	0.9352	0.0358	0.8731
	0.0040	*0.0043*	*0.0036*	*0.0211*	*0.0034*	*0.0037*	*0.0032*	*0.0280*
No schooling	0.0990	0.0860	0.0085	0.1464	0.0804	0.0648	0.0052	0.1269
	0.0150	*0.0043*	*0.0014*	*0.0211*	*0.0179*	*0.0037*	*0.0012*	*0.0280*
Urban	0.0482	0.3383	0.0163	0.2806	0.0278	0.3606	0.0100	0.2442
	0.0059	*0.0166*	*0.0021*	*0.0331*	*0.0051*	*0.0169*	*0.0019*	*0.0405*
Rural	0.0632	0.6617	0.0418	0.7194	0.0485	0.6394	0.0310	0.7558
	0.0052	*0.0166*	*0.0036*	*0.0331*	*0.0045*	*0.0169*	*0.0030*	*0.0405*
Male-headed	0.0532	0.8731	0.0464	0.7987	0.0350	0.8632	0.0302	0.7356
	0.0040	*0.0044*	*0.0035*	*0.0244*	*0.0033*	*0.0044*	*0.0029*	*0.0320*
Female-headed	0.0922	0.1269	0.0117	0.2013	0.0793	0.1368	0.0108	0.2644
	0.0121	*0.0044*	*0.0016*	*0.0244*	*0.0111*	*0.0044*	*0.0016*	*0.0320*
Population	**0.0581**	**1.0000**	**0.0581**	**1.0000**	**0.0410**	**1.0000**	**0.0410**	**1.0000**
	0.0040	*0.0000*	*0.0040*	*0.0000*	*0.0034*	*0.0000*	*0.0034*	*0.0000*

[-] Standard errors are in italics.

Table 3: Decomposition of total poverty (average poverty gap) in Mauritius, with a poverty line of USD 3

	2001				2006			
	Average poverty gap	Population share	Absolute contribution	Relative contribution	Average poverty gap	Population share	Absolute contribution	Relative contribution
Port Louis	0.0222	0.1088	0.0024	0.1960	0.0102	0.1069	0.0011	0.1203
	0.0040	*0.0111*	*0.0005*	*0.0368*	*0.0037*	*0.0110*	*0.0004*	*0.0422*
Pamplemousses	0.0092	0.1087	0.0010	0.0811	0.0067	0.1085	0.0007	0.0799
	0.0025	*0.0112*	*0.0003*	*0.0230*	*0.0024*	*0.0112*	*0.0003*	*0.0285*
Riv du Rempart	0.0086	0.0856	0.0007	0.0600	0.0053	0.0859	0.0005	0.0501
	0.0029	*0.0100*	*0.0003*	*0.0208*	*0.0024*	*0.0101*	*0.0002*	*0.0235*
Flacq	0.0095	0.1065	0.0010	0.0822	0.0091	0.1072	0.0010	0.1081
	0.0026	*0.0111*	*0.0003*	*0.0236*	*0.0029*	*0.0110*	*0.0003*	*0.0343*
Grand Port	0.0093	0.0913	0.0009	0.0694	0.0081	0.0887	0.0007	0.0792
	0.0026	*0.0102*	*0.0003*	*0.0204*	*0.0030*	*0.0101*	*0.0003*	*0.0296*
Savanne	0.0036	0.0581	0.0002	0.0169	0.0121	0.0542	0.0007	0.0721
	0.0018	*0.0082*	*0.0001*	*0.0090*	*0.0045*	*0.0080*	*0.0003*	*0.0282*
Plaines Wilhems	0.0060	0.2845	0.0017	0.1395	0.0034	0.2982	0.0010	0.1108
	0.0016	*0.0158*	*0.0005*	*0.0342*	*0.0010*	*0.0160*	*0.0003*	*0.0328*
Moka	0.0081	0.0662	0.0005	0.0437	0.0123	0.0643	0.0008	0.0871
	0.0028	*0.0088*	*0.0002*	*0.0161*	*0.0051*	*0.0088*	*0.0003*	*0.0363*
Black River	0.0144	0.0591	0.0009	0.0693	0.0102	0.0542	0.0006	0.0609
	0.0068	*0.0083*	*0.0004*	*0.0324*	*0.0038*	*0.0080*	*0.0002*	*0.0241*
Rodrigues	0.0952	0.0312	0.0030	0.2420	0.0661	0.0317	0.0021	0.2315
	0.0127	*0.0043*	*0.0006*	*0.0408*	*0.0084*	*0.0041*	*0.0004*	*0.0401*
Population	**0.0123**	**1.0000**	**0.0123**	**1.0000**	**0.0091**	**1.0000**	**0.0091**	**1.0000**
	0.0011	*0.0000*	*0.0011*	*0.0000*	*0.0009*	*0.0000*	*0.0009*	*0.0000*

Table 4: Decomposition of total poverty (average poverty gap) in 2001 Mauritius, with a poverty line of USD 3

	2001				2006			
	Average poverty gap	Population share	Absolute contribution	Relative contribution	Average poverty gap	Population share	Absolute contribution	Relative contribution
Some schooling	0.0110	0.9140	0.0100	0.8170	0.0081	0.9352	0.0076	0.8385
	0.0010	*0.0043*	*0.0009*	*0.0283*	*0.0009*	*0.0037*	*0.0008*	*0.0439*
No schooling	0.0262	0.0860	0.0023	0.1830	0.0226	0.0648	0.0015	0.1615
	0.0048	*0.0043*	*0.0004*	*0.0283*	*0.0067*	*0.0037*	*0.0004*	*0.0439*
Urban	0.0100	0.3383	0.0034	0.2764	0.0057	0.3606	0.0021	0.2263
	0.0016	*0.0166*	*0.0006*	*0.0402*	*0.0014*	*0.0169*	*0.0005*	*0.0490*
Rural	0.0134	0.6617	0.0089	0.7236	0.0110	0.6394	0.0070	0.7737
	0.0014	*0.0166*	*0.0010*	*0.0402*	*0.0012*	*0.0169*	*0.0008*	*0.0490*
Male-headed	0.0108	0.8731	0.0094	0.7669	0.0074	0.8632	0.0064	0.7066
	0.0010	*0.0044*	*0.0009*	*0.0334*	*0.0009*	*0.0044*	*0.0008*	*0.0432*
Female-headed	0.0226	0.1269	0.0029	0.2331	0.0194	0.1368	0.0027	0.2934
	0.0038	*0.0044*	*0.0005*	*0.0334*	*0.0033*	*0.0044*	*0.0005*	*0.0432*
Population	0.0123	1.0000	0.0123	1.0000	0.0091	1.0000	0.0091	1.0000
	0.0011	*0.0000*	*0.0011*	*0.0000*	*0.0009*	*0.0000*	*0.0009*	*0.0000*

[-] Standard errors are in italics.

Table 5 : Gini indices for Mauritius

	2001				2006			
Group	**Estimate**	**STD**	**LB**	**UB**	**Estimate**	**STD**	**LB**	**UB**
Population	0.339703	0.00617	0.327591	0.351814	0.356397	0.006203	0.344223	0.368572
1: Port Louis	0.325916	0.010409	0.305485	0.346347	0.315794	0.010829	0.294538	0.33705
2:Pamplemousses	0.328425	0.013699	0.301536	0.355314	0.326229	0.013223	0.300275	0.352183
3: Riv du Rempart	0.31015	0.017838	0.275139	0.345162	0.28881	0.011626	0.265991	0.311629
4: Flacq	0.286225	0.011676	0.263307	0.309143	0.32228	0.009297	0.304031	0.340529
5: Grand Port	0.305231	0.018363	0.269188	0.341275	0.36965	0.032629	0.305607	0.433693
6: Savanne	0.26965	0.012923	0.244285	0.295014	0.33233	0.021903	0.289338	0.375322
7: Plaines Wilhems	0.352421	0.009338	0.334093	0.370749	0.373008	0.010683	0.35204	0.393976
8: Moka	0.329795	0.043512	0.244389	0.4152	0.339027	0.015233	0.309129	0.368926
9: Black River	0.397952	0.034467	0.3303	0.465605	0.384276	0.032883	0.319733	0.448818
10: Rodrigues	0.360913	0.014904	0.331659	0.390168	0.362576	0.010937	0.34111	0.384042
Urban	0.35467	0.008096	0.338778	0.370562	0.373941	0.009824	0.354659	0.393222
Rural	0.327252	0.008508	0.310553	0.343951	0.337033	0.007452	0.322406	0.351659
Some schooling	0.341148	0.006462	0.328464	0.353832	0.356892	0.00643	0.344271	0.369513
No schooling	0.293797	0.009396	0.275354	0.31224	0.324208	0.012363	0.299943	0.348474

Table 6: Growth-redistribution decomposition of 2001-2006 headcount change in Mauritius

	Estimate	**STD**	**LB**	**UB**
Growth-redistribution decomposition of headcount for total population				
2001	0.058136	0.003975	0.051591	0.064682
2006	0.04103	0.003425	0.03539	0.046671
Growth	-0.019202	0.00325	-0.02557	-0.012833
Redistribution	0.002096	0.005366	-0.00842	0.012613
Growth-redistribution decomposition of headcount for Zone Urban				
2001	0.048211	0.005882	0.038525	0.057898
2006	0.027794	0.005114	0.019374	0.036214
Growth	-0.020072	0.00503	-0.02993	-0.010213
Redistribution	-0.000345	0.008203	-0.01642	0.015732
Growth-redistribution decomposition of headcount for Zone Rural				
2001	0.063212	0.005195	0.054657	0.071766
2006	0.048494	0.004499	0.041085	0.055903
Growth	-0.015292	0.004031	-0.02319	-0.00739
Redistribution	0.000574	0.006906	-0.01296	0.01411

Table 7: Pro-poor indices in Mauritius, 2001-2006

Pro-poor indices	**Estimate**	**STD**	**LB**	**UB**
Growth rate (g)	0.111909	0.024382	0.064121	0.159696
Ravallion and Chen (2003) index	0.073766	0.030274	0.014430	0.133103
Ravallion and Chen (2003) $-g$	-0.038142	0.034039	-0.104857	0.028572
Kakwani and Pernia (2000) index	0.970348	0.272040	0.437160	1.503537
$PEGR$ index	0.108590	0.039286	0.031591	0.185590
$PEGR - g$	-0.003318	0.030424	-0.062948	0.056311

STD: standard error
LB: lower bound of 95% confidence interval
UB: upper bound of 95% confidence interval

Results for South Africa

Figure 7

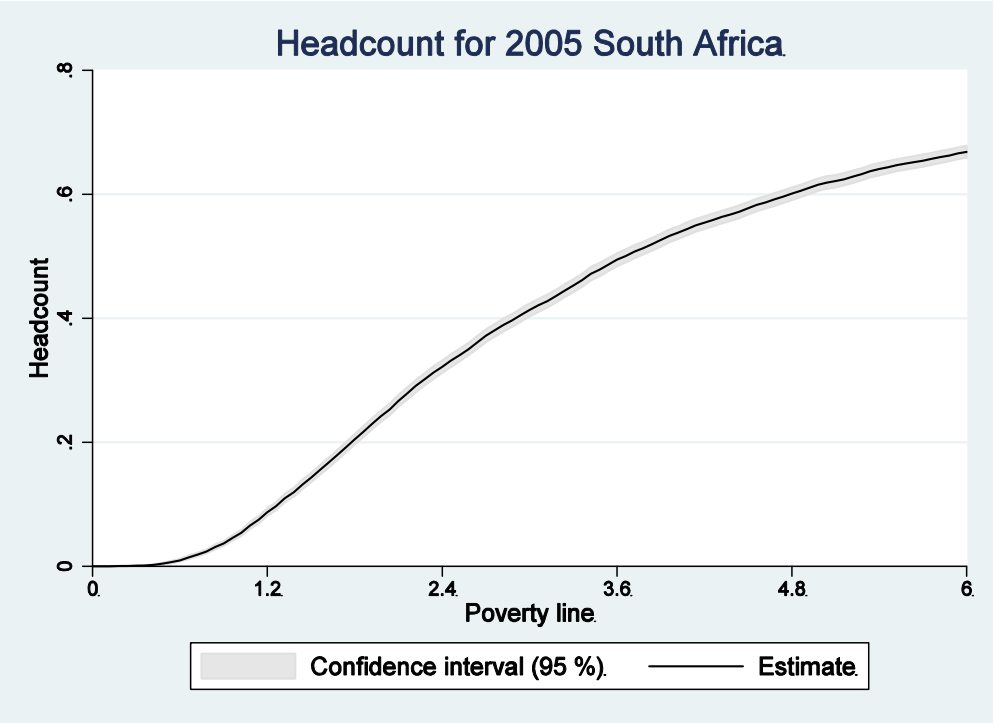

Figure 8

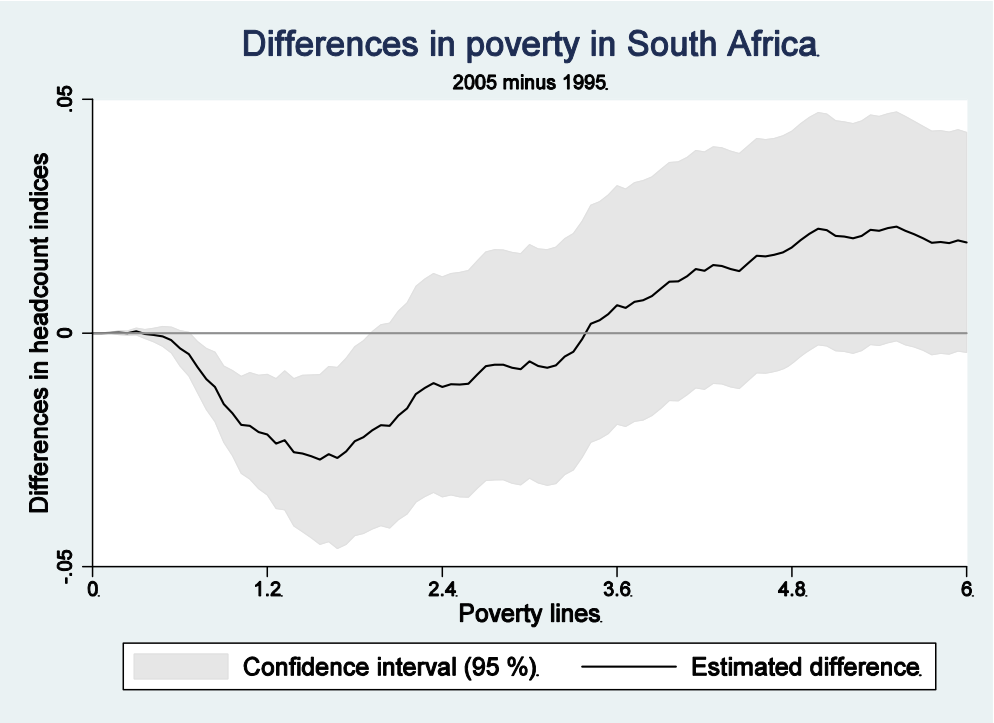

Figure 9

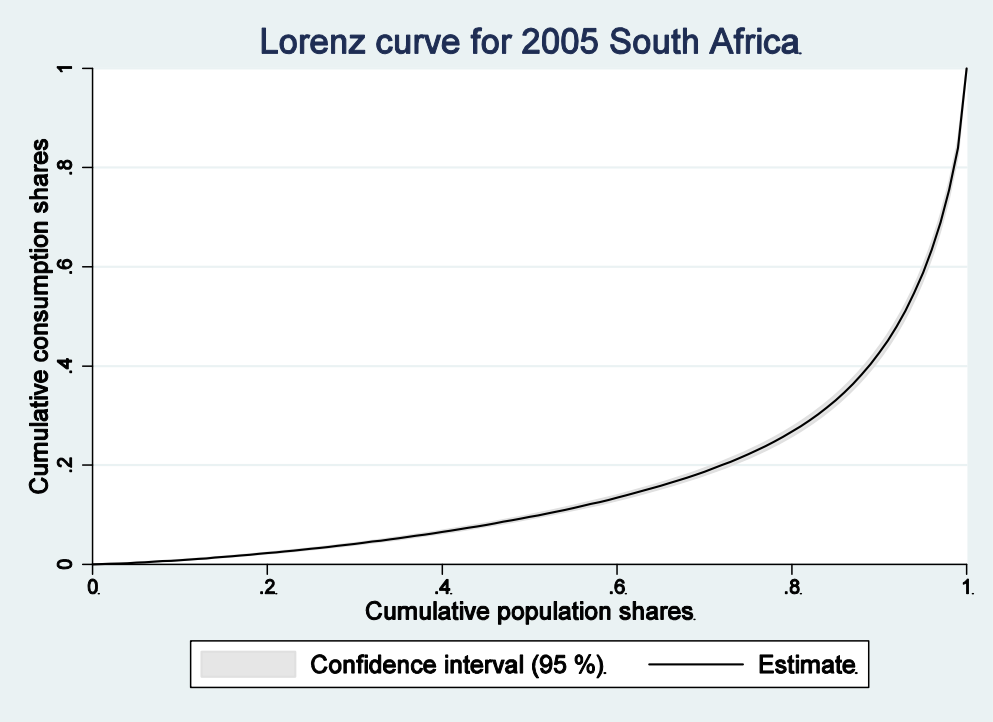

Figure 10

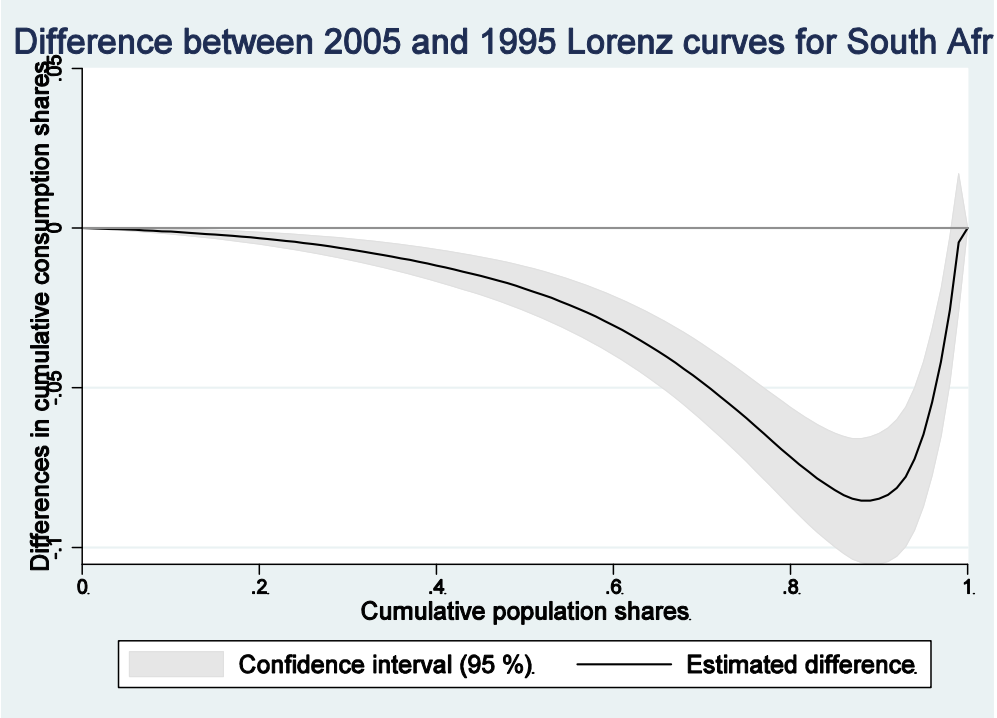

Figure 11

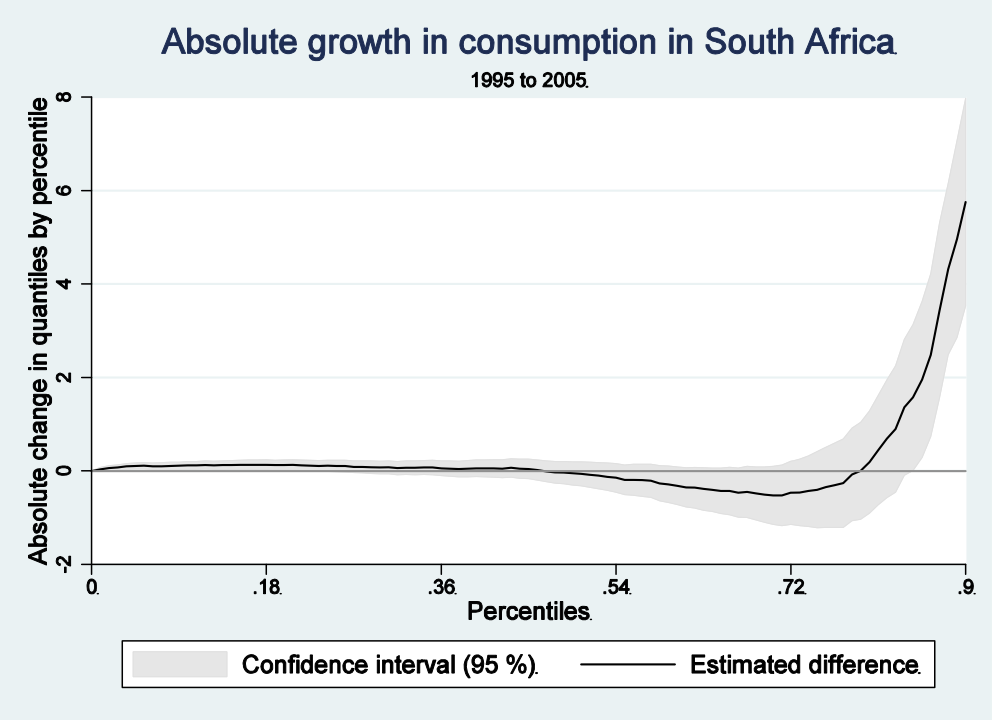

Figure 12

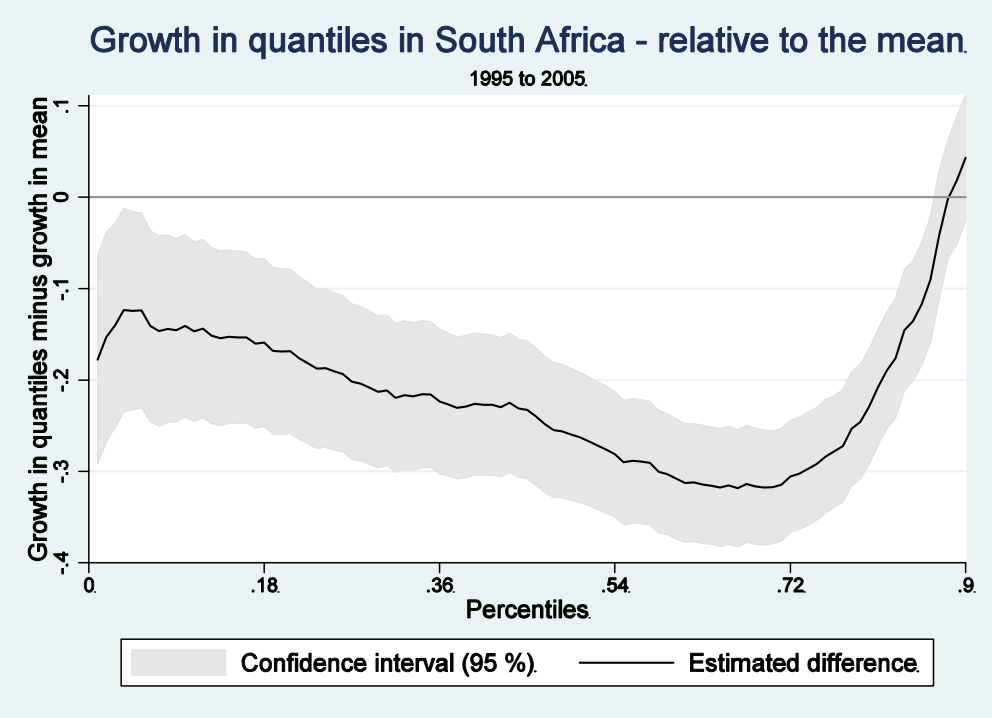

Table 8: Decomposition of total poverty (headcount) in South Africa, with a poverty line of USD 3

	1995				2005			
	Headcount	Population share	Absolute contribution	Relative contribution	Headcount	Population share	Absolute contribution	Relative contribution
Western Cape	0.1902	0.0902	0.0172	0.0409	0.2292	0.1001	0.0229	0.0555
	0.0203	*0.0088*	*0.0021*	*0.0051*	*0.0166*	*0.0029*	*0.0019*	*0.0044*
Eastern Cape	0.6265	0.1587	0.0994	0.2371	0.5267	0.1446	0.0762	0.1843
	0.0219	*0.0118*	*0.0085*	*0.0185*	*0.0133*	*0.0031*	*0.0028*	*0.0064*
Northern Cape	0.4252	0.0179	0.0076	0.0181	0.4654	0.0240	0.0112	0.0271
	0.0317	*0.0019*	*0.0010*	*0.0023*	*0.0181*	*0.0007*	*0.0006*	*0.0015*
Free State	0.5439	0.0672	0.0366	0.0872	0.3304	0.0624	0.0206	0.0499
	0.0282	*0.0049*	*0.0027*	*0.0065*	*0.0160*	*0.0018*	*0.0012*	*0.0029*
KwaZulu Natal	0.4290	0.2110	0.0905	0.2159	0.5379	0.2095	0.1127	0.2727
	0.0248	*0.0171*	*0.0084*	*0.0193*	*0.0116*	*0.0035*	*0.0031*	*0.0069*
North West	0.5274	0.0804	0.0424	0.1011	0.4325	0.0696	0.0301	0.0728
	0.0350	*0.0090*	*0.0057*	*0.0132*	*0.0232*	*0.0027*	*0.0020*	*0.0048*
Gauteng	0.1291	0.1700	0.0219	0.0523	0.1934	0.2022	0.0391	0.0946
	0.0167	*0.0171*	*0.0039*	*0.0096*	*0.0125*	*0.0034*	*0.0028*	*0.0063*
Mpumalanga	0.4907	0.0728	0.0357	0.0852	0.4787	0.0741	0.0355	0.0859
	0.0298	*0.0061*	*0.0036*	*0.0084*	*0.0154*	*0.0016*	*0.0014*	*0.0035*
Limpopo	0.5160	0.1317	0.0680	0.1621	0.5728	0.1134	0.0649	0.1572
	0.0339	*0.0122*	*0.0086*	*0.0191*	*0.0151*	*0.0025*	*0.0026*	*0.0059*
Population	**0.4193**	**1.0000**	**0.4193**	**1.0000**	**0.4133**	**1.0000**	**0.4133**	**1.0000**
	0.0116	*0.0000*	*0.0116*	*0.0000*	*0.0053*	*0.0000*	*0.0053*	*0.0000*

Table 9: Decomposition of total poverty (average poverty gap) in South Africa, with a poverty line of USD 3

	1995				2005			
	Average poverty gap	Population share	Absolute contribution	Relative contribution	Average poverty gap	Population share	Absolute contribution	Relative contribution
Western Cape	0.0551	0.0902	0.0050	0.0280	0.0756	0.1001	0.0076	0.0460
	0.0070	*0.0088*	*0.0007*	*0.0042*	*0.0073*	*0.0029*	*0.0008*	*0.0046*
Eastern Cape	0.2927	0.1587	0.0465	0.2617	0.2088	0.1446	0.0302	0.1836
	0.0137	*0.0118*	*0.0043*	*0.0216*	*0.0073*	*0.0031*	*0.0014*	*0.0076*
Northern Cape	0.1693	0.0179	0.0030	0.0171	0.1883	0.0240	0.0045	0.0275
	0.0181	*0.0019*	*0.0004*	*0.0025*	*0.0093*	*0.0007*	*0.0003*	*0.0018*
Free State	0.2555	0.0672	0.0172	0.0968	0.1134	0.0624	0.0071	0.0431
	0.0163	*0.0049*	*0.0014*	*0.0079*	*0.0070*	*0.0018*	*0.0005*	*0.0031*
KwaZulu Natal	0.1674	0.2110	0.0353	0.1991	0.2344	0.2095	0.0491	0.2986
	0.0136	*0.0171*	*0.0038*	*0.0204*	*0.0060*	*0.0035*	*0.0015*	*0.0081*
North West	0.2334	0.0804	0.0188	0.1056	0.1725	0.0696	0.0120	0.0729
	0.0217	*0.0090*	*0.0028*	*0.0150*	*0.0097*	*0.0027*	*0.0008*	*0.0046*
Gauteng	0.0395	0.1700	0.0067	0.0378	0.0579	0.2022	0.0117	0.0712
	0.0061	*0.0171*	*0.0013*	*0.0077*	*0.0045*	*0.0034*	*0.0010*	*0.0057*
Mpumalanga	0.1986	0.0728	0.0145	0.0815	0.2025	0.0741	0.0150	0.0913
	0.0194	*0.0061*	*0.0017*	*0.0096*	*0.0087*	*0.0016*	*0.0008*	*0.0046*
Limpopo	0.2325	0.1317	0.0306	0.1725	0.2407	0.1134	0.0273	0.1659
	0.0203	*0.0122*	*0.0043*	*0.0223*	*0.0091*	*0.0025*	*0.0014*	*0.0076*
Population	0.1775	1.0000	0.1775	1.0000	0.1645	1.0000	0.1645	1.0000
	0.0064	*0.0000*	*0.0064*	*0.0000*	*0.0026*	*0.0000*	*0.0026*	*0.0000*

Table 10: Decomposition of total poverty (headcount) in South Africa, with a poverty line of USD 3

	1995				2005			
	Headcount	Population share	Absolute contribution	Relative contribution	Headcount	Population share	Absolute contribution	Relative contribution
Some schooling	0.3378	0.7313	0.2470	0.5891	0.3460	0.8121	0.2810	0.6799
	0.0110	*0.0099*	*0.0078*	*0.0117*	*0.0059*	*0.0040*	*0.0051*	*0.0080*
No schooling	0.6860	0.2349	0.1611	0.3842	0.7039	0.1879	0.1323	0.3201
	0.0125	*0.0090*	*0.0076*	*0.0116*	*0.0104*	*0.0040*	*0.0036*	*0.0080*
Urban	0.2112	0.4818	0.1017	0.2426	0.2630	0.5898	0.1551	0.3754
	0.0093	*0.0184*	*0.0056*	*0.0157*	*0.0072*	*0.0042*	*0.0045*	*0.0086*
Rural	0.6128	0.5182	0.3176	0.7574	0.6293	0.4102	0.2581	0.6246
	0.0130	*0.0184*	*0.0135*	*0.0157*	*0.0070*	*0.0042*	*0.0042*	*0.0086*
Male-headed	0.3608	0.6748	0.2435	0.5806	0.3247	0.5657	0.1837	0.4445
	0.0111	*0.0073*	*0.0072*	*0.0102*	*0.0069*	*0.0054*	*0.0044*	*0.0088*
Female-headed	0.5408	0.3252	0.1759	0.4194	0.5286	0.4343	0.2296	0.5555
	0.0138	*0.0073*	*0.0071*	*0.0102*	*0.0081*	*0.0054*	*0.0047*	*0.0088*
African/Black	0.5168	0.7634	0.3946	0.9409	0.4868	0.7950	0.3871	0.9366
	0.0118	*0.0106*	*0.0117*	*0.0044*	*0.0059*	*0.0044*	*0.0052*	*0.0040*
Coloured	0.2747	0.0856	0.0235	0.0560	0.2843	0.0879	0.0250	0.0605
	0.0190	*0.0052*	*0.0017*	*0.0043*	*0.0164*	*0.0030*	*0.0016*	*0.0039*
Indian/Asian	0.0268	0.0252	0.0007	0.0016	0.0379	0.0248	0.0009	0.0023
	0.0063	*0.0049*	*0.0002*	*0.0006*	*0.0182*	*0.0019*	*0.0005*	*0.0011*
White	0.0047	0.1259	0.0006	0.0014	0.0031	0.0923	0.0003	0.0007
	0.0012	*0.0067*	*0.0002*	*0.0004*	*0.0014*	*0.0034*	*0.0001*	*0.0003*
Population	**0.4193**	**1.0000**	**0.4193**	**1.0000**	0.4133	1.0000	0.4133	1.0000
	0.0116	*0.0000*	*0.0116*	*0.0000*	*0.0053*	*0.0000*	*0.0053*	*0.0000*

[-] Standard errors are in italics.

Table 11: Decomposition of total poverty (average poverty gap) in South Africa, with a poverty line of USD 3

	1995				2005			
	Average poverty gap	Population share	Absolute contribution	Relative contribution	Average poverty gap	Population share	Absolute contribution	Relative contribution
Some schooling	0.1353	0.7313	0.0990	0.5576	0.1299	0.8121	0.1055	0.6411
	0.0054	*0.0099*	*0.0039*	*0.0132*	*0.0027*	*0.0040*	*0.0023*	*0.0096*
No schooling	0.3150	0.2349	0.0740	0.4168	0.3141	0.1879	0.0590	0.3589
	0.0092	*0.0090*	*0.0041*	*0.0133*	*0.0065*	*0.0040*	*0.0018*	*0.0096*
Urban	0.0759	0.4818	0.0366	0.2061	0.0895	0.5898	0.0528	0.3207
	0.0039	*0.0184*	*0.0021*	*0.0146*	*0.0030*	*0.0042*	*0.0018*	*0.0093*
Rural	0.2719	0.5182	0.1409	0.7939	0.2724	0.4102	0.1117	0.6793
	0.0086	*0.0184*	*0.0069*	*0.0146*	*0.0042*	*0.0042*	*0.0022*	*0.0093*
Male-headed	0.1482	0.6748	0.1000	0.5634	0.1274	0.5657	0.0721	0.4383
	0.0057	*0.0073*	*0.0037*	*0.0114*	*0.0032*	*0.0054*	*0.0020*	*0.0099*
Female-headed	0.2383	0.3252	0.0775	0.4366	0.2128	0.4343	0.0924	0.5617
	0.0086	*0.0073*	*0.0038*	*0.0114*	*0.0042*	*0.0054*	*0.0022*	*0.0099*
African/Black	0.2221	0.7634	0.1696	0.9553	0.1956	0.7950	0.1555	0.9451
	0.0072	*0.0106*	*0.0064*	*0.0038*	*0.0030*	*0.0044*	*0.0025*	*0.0044*
Coloured	0.0886	0.0856	0.0076	0.0427	0.0976	0.0879	0.0086	0.0522
	0.0070	*0.0052*	*0.0006*	*0.0037*	*0.0073*	*0.0030*	*0.0007*	*0.0041*
Indian/Asian	0.0056	0.0252	0.0001	0.0008	0.0160	0.0248	0.0004	0.0024
	0.0015	*0.0049*	*0.0000*	*0.0003*	*0.0102*	*0.0019*	*0.0003*	*0.0016*
White	0.0017	0.1259	0.0002	0.0012	0.0006	0.0923	0.0001	0.0004
	0.0005	*0.0067*	*0.0001*	*0.0004*	*0.0003*	*0.0034*	*0.0000*	*0.0002*
Population	**0.1775**	**1.0000**	**0.1775**	**1.0000**	**0.1645**	**1.0000**	**0.1645**	**1.0000**
	0.0064	*0.0000*	*0.0064*	*0.0000*	*0.0026*	*0.0000*	*0.0026*	*0.0000*

[-] Standard errors are in italics.

Table 12: Gini indices for South Africa

	1995				2005			
Group	**Estimate**	**STD**	**LB**	**UB**	**Estimate**	**STD**	**LB**	**UB**
Population	0.614981	0.006426	0.602364	0.627598	0.6728	0.00464	0.663705	0.681896
Western Cape	0.555031	0.014723	0.526122	0.583941	0.672204	0.011866	0.648945	0.695463
Eastern Cape	0.61089	0.014255	0.5829	0.63888	0.632273	0.010149	0.612381	0.652166
Northern Cape	0.616697	0.017002	0.583312	0.650082	0.60313	0.011478	0.580633	0.625628
Free State	0.622378	0.013025	0.596802	0.647954	0.632206	0.011968	0.608748	0.655664
KwaZulu Natal	0.584612	0.01483	0.555493	0.613732	0.657631	0.011163	0.63575	0.679511
North West	0.602735	0.024562	0.554505	0.650966	0.633894	0.013896	0.606658	0.661131
Gauteng	0.54103	0.02041	0.500953	0.581107	0.637105	0.009955	0.617591	0.656618
Mpumalanga	0.545889	0.019193	0.508201	0.583576	0.650575	0.015501	0.620193	0.680957
Limpopo	0.607209	0.020253	0.567441	0.646977	0.567662	0.012404	0.543349	0.591976
Urban	0.552995	0.008551	0.536204	0.569785	0.64887	0.005419	0.638248	0.659492
Rural	0.578594	0.013607	0.551875	0.605314	0.531968	0.007906	0.516471	0.547464
Some schooling	0.60197	0.00732	0.587597	0.616344	0.663874	0.004823	0.654421	0.673327
No schooling	0.441819	0.011611	0.41902	0.464619	0.425676	0.013882	0.398465	0.452886

STD: standard error
LB: lower bound of 95% confidence interval
UB: upper bound of 95% confidence interval

Table 13: Growth-redistribution decomposition of 1995-2005 headcount change in South Africa

	Estimate	STD	LB	UB
Growth-redistribution decomposition of headcount for total population				
1995	0.419324	0.011585	0.400241	0.438407
2005	0.413257	0.005307	0.404527	0.421987
Growth	-0.09251	0.014906	-0.12173	-0.06329
Redistribution	0.086443	0.012702	0.061548	0.111337
Growth-redistribution decomposition of headcount for Zone Urban				
1995	0.211178	0.009291	0.195874	0.226482
2005	0.262999	0.007201	0.251154	0.274843
Growth	-0.065212	0.011513	-0.08778	-0.04265
Redistribution	0.117032	0.012165	0.093189	0.140876
Growth-redistribution decomposition of headcount for Zone Rural				
1995	0.612844	0.012975	0.591471	0.634217
2005	0.629314	0.007032	0.617747	0.640881
Growth	0.064195	0.021137	0.022767	0.105622
Redistribution	-0.047725	0.018246	-0.08349	-0.01196

Table 14: Pro-poor indices in South Africa, 1995-2005

Pro-poor indices	Estimate	STD	LB	UB
Growth rate (g)	0.254	0.052	0.152	0.356
Ravallion and Chen (2003) index	0.063	0.026	0.012	0.113
Ravallion and Chen (2003) $-g$	-0.191	0.044	-0.278	-0.104
Kakwani and Pernia (2000) index	0.069	0.140	-0.204	0.343
$PEGR$ index	0.018	0.038	-0.056	0.092
$PEGR - g$	-0.236	0.038	-0.311	-0.161

STD: standard error
LB: lower bound of 95% confidence interval
UB: upper bound of 95% confidence interval

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